

AN INVESTIGATION INTO THE NATURE OF, AND RELATIONSHIPS
BETWEEN, EDUCATIONAL OBJECTIVES AS STATED AND THOSE INHERENT
IN RELATED EXAMINATION QUESTIONS FOR AUDITING COURSES AT
SOUTH AFRICAN UNIVERSITIES

A THESIS PRESENTED TO THE UNIVERSITY OF
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MASTER OF COMMERCE

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ABSTRACT

This study sets out to investigate the relationship between the stated and inherent auditing course objectives of selected South African universities. The need for congruence between the two is assumed.

Stated auditing course objectives were established by means of a survey questionnaire to 17 South African universities. A panel of judges was used to perform an inferential analysis of 3 of these universities' related examination papers to determine their inherent course objectives. In addition, auditing practitioners were surveyed to establish what they considered desirable auditing course objectives at South African universities.

Auditing, as a discipline, provided the domain of this study and Bloom's taxonomy the common currency for comparisons. To establish the background against which this study took place a number of aspects were examined: the nature of auditing as a discipline and practice; auditing education; and the classification of educational objectives. An insight into the historical development of auditing as a practise and as a discipline is important for an appreciation of the tension that exists between the the theoretical and practical influences on auditing education. The choice of Bloom's taxonomy as the basis for classifying educational objectives in this study followed a detailed examination of four possible models. An indication of the usefulness of Bloom's taxonomy for classifying auditing course objectives will be a by-product of the study.

The comparison of stated and inherent auditing course objectives was complicated by the practical necessity of using different scoring bases for each. The resolution of this problem resulted in measurement of deviations from a mean (or norm) expressed as Z-scores. This effectively eliminated the differences between the different scoring bases. The outcome of this comparison revealed incidences of prominent mismatches between the stated and inherent objectives of two of the three universities subjected to inferential analysis.

Generalizations of these results were not statistically possible due to the small sample and population. The presence of these mismatches does, however, indicate a potentially serious educational problem for universities through, inter alia, the impairment of the learning experience and misdirecting students' educational efforts.

A number of related implications were considered. The use of Bloom's taxonomy for the classification of auditing course objectives proved, with some limitations, successful. It was found that the inferential analysis of auditing examination questions (typical of South African universities) yielded less precise results than was the case with objective-test examination questions.

The educational 'aims' of auditing courses were established through the questionnaire to universities and practitioners. Both respondent groups clearly rated equipping students with 'conceptual knowledge' as the most important aim. Preparing students for the Qualifying Examination was the next choice of both groups.

The relevance and validity of the universities' stated auditing course objectives was examined with reference to

the views of the profession (established by means of the same questionnaire used for universities), authoritative studies and the 'internal consistency' between each university's stated and inherent course objectives. Authoritative studies proved inconclusive in validating universities' auditing course objectives which were strongly supported by the views of the profession. The incidence of prominent mismatching between the stated and inherent objectives of two of the three universities analysed did, however, cast doubt upon the validity of those auditing course objectives due to their 'internal inconsistency'.

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DECLARATION

I certify that this thesis is my own work and has not been submitted as a dissertation for a degree of another

Signed by candidate

Signature Removed

P. M. Smith

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CHAPTER 1

INTRODUCTION

- 1. PROBLEM STATEMENT**
- 2. PURPOSE OF STUDY**
- 3. SCOPE AND LIMITATIONS**
- 4. RESEARCH METHODOLOGY**
- 5. POSSIBLE IMPLICATIONS**

1. PROBLEM STATEMENT

Knowledge has provided the basis for the phenomenal technological advances of the 20th century: education has been the means to that knowledge. Toffler (1970) described knowledge as the fuel for the great engine of technology. This century has brought mass education, and the concomitant development of a growing body of educational theory.

An element of this theory concerned the education process itself, and it is from within this element that this study establishes its frame of reference. The education process has, particularly during the past 50 years, been thoroughly analysed. While educational theorists have been diverse in the detail of their analyses, three major features of the process have emerged from these analyses.

Tyler, for example, suggests answering four fundamental questions in developing any plan of instruction (Tyler, 1949 at p.1). These address educational purposes, the educational experiences and their organisation, and determining the attainment of the educational purposes. Gagne and Briggs (1979) set out ten rational steps in the derivation of an instructional system. They commence with the development of course objectives (from the needs for instruction), deal

with the process of instruction and, finally, attend to evaluation of students attainment of educational objectives. Melton (1982) explores a number of variations on the same theme, but what is common to all of these systems are the three basic phases; educational objectives, curriculum presentation and evaluation.

Kibler and Basset (1977) suggest that writing educational objectives for a course is fundamental to course planning by teachers, essential as a guide to students' learning and also serves to facilitate effective discussion on course outcomes among educators.

".... the planning represented by a systems approach implies an analysis of components in a logical order, and careful coordination of the total effort among the planners. Imagine what might result if three teachers were to work independently to plan the three components for a unit of instruction on "oriental culture". Teacher A, assigned to write the objectives, might focus upon learning of facts about education in China; teacher B, assigned to write or choose the instructional materials, might focus on principles relating to the political system in Japan; and teacher C, assigned to make the tests, might focus on "how to solve industrial problems in Korea". The result obviously, would be complete chaos. Learners could appropriately complain that there was no agreement among objectives, materials and evaluation." (Briggs, 1977a at p.7)

Educational objectives are vital to a cohesive relationship between the phases of a course. Evaluation at the end of a course (or unit of instruction), is intended to assess

whether students have attained the educational objectives set. The curriculum presentation would be the means for changing students behaviour in a manner that would enable them to achieve the course objectives; "...educational objectives become the criteria by which materials are selected, content is outlined, instructional procedures are developed and tests and examinations are prepared." (Tyler, 1949 at p 3)

The importance of educational objectives in directing both teachers and students towards the final evaluation underlies the need for matching between the two. Briggs (1977b at p.155) makes this point forcefully; "In our view, it is wrong, both "technically" and ethically, to present objectives that lead students to learn one capability but to give them a test that measures a different capability."

The consequences of incongruence or mismatching between educational objectives and the evaluation process at the end of a course might, at the very least, be educationally inefficient, but could well cause the "complete chaos" suggested by Briggs (1977a at p.7). It is the nature of this relationship in Auditing courses taught at South African universities that is the central focus of this study. In particular, the scrutiny of the degree of matching that

exists between the educational objectives and evaluation processes of each course.

2. PURPOSE OF STUDY

The overall aims of this study are to investigate the nature of, and relationships between, educational objectives as stated and those inherent in related examination questions for auditing course at South African Universities .

The objectives articulated below are intended to achieve the above aims.

Detailed Objectives:

1. To establish the background against which this study is to take place by examining the nature of auditing as a discipline and practice, auditing education and the classification of educational objectives;
2. To identify the stated educational objectives for auditing courses at South African Universities;

-
3. To identify the educational objectives for auditing courses at South African Universities as preferred by auditing practitioners;
 4. To determine the taxonomic character of auditing course objectives;
 5. To compare the universities' stated educational objectives (per 2 above) with the profession's preferred objectives (per 3 above) on the basis of their taxonomic character (per 4 above);
 6. To identify the educational objectives inherent in the related auditing examination questions of selected South African Universities;
 7. To investigate the relationship between the stated and inherent educational objectives of selected South African universities;
 8. To identify and discuss implications arising from the study and, where appropriate, put forward recommendations.

The central thrust of this study will be towards the comparison of stated and inherent course objectives. Three

of the 17 South African university respondents will be subjected to this comparison based on the hypothesis that there is evidence of mismatching between stated and inherent objectives. Because of the considerable time involved in inferential analysis of each examination paper and the need to rely on a panel of judges for this task, the analysis of a large number of universities' examination papers proved impractical. Subject to this limitation, evidence of obvious mismatch between stated and inferred objectives on one or more of the 3 universities will at least indicate the existence of the phenomenon. There is neither need nor intention to identify errant universities. If it is established that mismatching can and does occur, and if this study establishes the methodology to monitor these relationships, then a recommendation of some practical value will result.

3. SCOPE AND LIMITATIONS

This study focuses on auditing courses at South African Universities. These courses are components of educational programmes leading to a Certificate in the Theory of Accounting (CTA), or its equivalent, which is a prerequisite to the attainment of the professional qualification of Chartered Accountant (South Africa),

(CA(SA)). The step from CTA to CA(SA) requires that students serve a practising auditor (under articles) for a period of 3 to 5 years and ultimately pass the Qualifying Examination(QE) set by the Public Accountants' and Auditors' Board (PAAB).

This latter requirement, ostensibly independent of the universities, exerts considerable pressure on them to ensure that their successful CTA candidates have a reasonable chance of passing the QE. The pressure arises from the fact that candidates performance in the QE is compared on an inter-university basis. Poor performance in this examination by candidates emanating from a particular university is seriously regarded by practitioners, students and, most of all, by the university itself. This phenomenon consequently exerts considerable pressure on university auditing courses to ultimately prepare students for the QE. The primary aim of the QE is, in reality, a debatable issue. On the one hand it is claimed to be a test of 'professional competence'. On the other hand, many candidates sit (and pass) the examination with less than five months of 'professional experience' as an articulated clerk. Furthermore, academics are involved in the setting of questions used for the QE.

In view of this relationship between the QE and university auditing courses, an issue to be addressed is whether it is

acceptable to explore the relationship between universities' stated and inherent educational objectives before having investigated the validity of universities stated educational objectives in relation to the objectives of the QE. Alternatively, it might be argued that until the relationships between the inherent objectives of both the QE and university auditing examinations have been compared, all others are irrelevant. This study refutes this argument but, nevertheless, recognizes that the relationship between the stated and inherent objectives of university auditing courses resides within a broader set of issues. To this extent, this study is contextually limited.

While course aims have also been sought in the survey of universities, it is only course objectives that are to be subjected to statistical analysis and comparison of stated with inherent objectives. The aims will be briefly examined in a concluding chapter.

While survey responses have been obtained from 17 of the 18 South African Universities involved in teaching auditing, only three universities will be subjected to the inferential analysis of educational objectives. The reason for this limitation is twofold. Firstly, the purpose of the inferential analysis is not to evaluate every university's educational objectives for auditing courses, but to test the

validity of the process, based on Bloom's taxonomy, for achieving a meaningful evaluation. Secondly, the task of conducting an inferential analysis on the examination papers of all 17 universities would be a task of considerable magnitude (involving an estimated 820 examination questions and constituting approximately 270 examination hours).

The conclusions to be drawn from this study will, in view of the limited inferential analysis carried out, be contextual rather than general in indicating whether or not there is a likelihood of mismatch between stated and inherent objectives. However, given the small number of universities involved and the potentially undesirable consequences of mismatching stated and inherent objectives, the results of the inferential analysis, whether positive or negative, should not detract from the need to investigate this matter further. The continuing monitoring of the match between stated and inherent objectives is a task which each university should carry out for itself. It is intended that such monitoring will be facilitated and encouraged by the methodology established in this study.

4. RESEARCH METHODOLOGY

Data has been gathered from three major sources, viz., surveys of South African universities, auditing practitioners and personal interviews. The form and nature of this data is as follows:

4.1 South African Universities

A questionnaire was sent to the department of accounting of each of the 18 South African Universities (Refer Appendix A for specimen questionnaire). Part I of the questionnaire required respondents to "rank" each of five given auditing course aims in order of importance, with 1 as "high" and 5 as "low".

Part II set out a comprehensive auditing syllabuses under ten typical topic headings. Each section contained between 3 and 5 educational objectives, each of which required a "rating" out of 10, with 10 being 'highly representative' of the University's educational objectives, and 1 being 'unrepresentative'. Each of the given objectives was framed in terms of one of the levels of knowledge of Bloom's Taxonomy. The reason for basing objectives on a levels of knowledge model was to facilitate an inferential analysis of

educational objectives from examination questions, and their subsequent matching with the stated educational objectives of that university. To do this, a common base for the objectives from both sources was essential.

4.2 Auditing Practitioners

Questionnaires were sent to a sample of 96 auditing firms throughout South Africa. This questionnaire was identical to the one sent to universities except that practitioners were asked what they thought the aims and objectives of university auditing courses should be, (refer Appendix A for specimen questionnaire). The results of this questionnaire facilitated the identification of practitioners' views on the aims and objectives of university auditing courses and consequently the evaluation of universities' educational objectives through, inter alia, comparison with the views of practitioners.

4.3 Personal Interviews

In order to obtain background on the views of respondents and identify and discuss any issues requiring clarification, academics from six South African Universities were

interviewed. In addition, five auditing practitioners, selected from three of the largest eight audit firms in South Africa, and the Education Officer of the Public Accountants' and Auditors' Board (PAAB), were formally interviewed. The procedure in each case was to establish whether any significant difficulties were encountered in responding to the questionnaire. In no instances were responses amended as a result of these discussions which invariably led to interviewees explaining the reasons for their responses to specific questions. Subsequent discussion tended to focus on some of the major educational issues concerning the auditing profession, such as, the relationship between university education and professional training in the firms; the nature of the Qualifying Examination (QE) of the PAAB, and the intellectual abilities sought and taught by practitioners and universities respectively.

A period was spent abroad during which 12 educational institutions in the United Kingdom and Belgium were visited and 25 individuals formally interviewed. The area of discussion was auditing education and training and discussions focused on the nature, aims and objectives of auditing courses at universities, polytechnics, professional institutes and audit firms. In particular, the existence of similar studies was investigated as was the relationship

between auditing educators and auditing practitioners and trainers. These interviews were conducted at a formative stage of this study and were instrumental in re-focusing its direction and emphasis more precisely.

4.5 Literature Survey

The survey of literature involved the search for an educational taxonomy. As a tentative choice, Bloom's taxonomy was subjected to critical scrutiny. The conclusion resulting from this survey was that, in spite of limitations and shortcomings, Bloom's taxonomy still offered the best prospects of providing a usable (understandable), and suitable taxonomy for the classification of typical auditing course objectives.

4.6 Analyses and Comparisons

Having gathered data on stated auditing course objectives from universities, and on preferred objectives from practitioners, each group's responses were analysed, summarized and compared. In this way a taxonomic as well as topic profile of auditing courses at South African universities was established. Analysed practitioner

responses were compared with university objectives to reveal the congruence between the two groups. The statistical analysis was computerised but relatively straightforward.

The examination papers of selected universities were X analysed to establish their inherent course objectives. A panel of judges was used for this purpose and the reliability of results compared to the results of similar analyses using Bloom's taxonomy.

The comparison of stated and inherent objectives involved the manipulation of the measurement bases before meaningful comparison could be achieved.

5. SIGNIFICANCE OF CONCLUSIONS

An individual and collective indication of the educational aims and objectives for the auditing courses of the 17 South African universities has not previously been produced. For each university, the statistical analysis of this data will indicate, inter alia, how, and to what extent any university deviates from the norm. It will also provide a taxonomic and topic profile of the educational objectives of auditing courses at South African universities.

The auditing professional's views on what he/she believes the educational aims and objectives of auditing courses at South African universities should be will be produced for the first time. The collective views of the profession will be compared with universities collective stated objectives to determine the degree of congruence that exists between the two. Much could be drawn from the results of this comparison. Drawing conclusions from such a comparison involves value judgments that will be left to individual universities to react to in accordance with their own academic philosophies.

Although not one of the objectives of this study, a by-product will be an assessment of whether Bloom's taxonomy is a viable model for the classification of auditing course objectives. The choice of models will be extensively dealt with in Chapter 3.

Although this study will use auditing courses at South African universities and the views of auditing practitioners in South Africa, the same methodology may be applicable to similar studies, although the choice of taxonomy will always have to be carefully matched to the nature of the subject being analysed.

It is hoped that this study will induce further investigation into auditing education. There would be two major sources of such inducement; firstly, the methodology established by the study for the continued monitoring of the relationship between stated and inherent objectives. Secondly, further investigation deriving from the questions arising during the course of this study.

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CHAPTER 2

AUDITING AS A DISCIPLINE

- 1. INTRODUCTION**
- 2. ACCOUNTING AND AUDITING**
- 3. THE FOUNDATIONS OF AUDITING THEORY**
- 4. THE THEORETICAL STRUCTURE OF AUDITING**

1. INTRODUCTION

Auditing, and auditing education are focal points of this study. It is, therefore, imperative that the basic terminology and its related implications for this study are unambiguous. In this, and the succeeding chapter, the nature and meaning of these terms will be examined. In this chapter auditing, as a practice within the accounting profession and as an academic discipline will be subjected to examination.

Consideration of auditing theory is of particular importance to auditing education in view of the tensions between theory and practice within the educational environment. Auditing has, and continues to evolve primarily from practice. Theoretical work (and influence) on auditing has been neither prolonged nor prolific. The first theoretical work of significance was published in 1961 and there ".... has been in the interval little, if any, further contribution to theory development." (Flint, 1980). This is true in one sense; namely, that Mautz and Sharaf's (1961) seminal work has remained largely intact after 25 years of academic scrutiny. However, while there have been few works of significance since 1961, (all of which have been noticeably influenced by the work of Mautz and Sharaf), the works of

Silvoso et al (1973), Schandl (1978), Lee (1982) and Flint (1980) are notable.

2. ACCOUNTING AND AUDITING

In ancient times the need for accountability would have arisen where assets had been entrusted to the stewardship of others. With large hierachical organisations of people delegation of authority often gave rise to multiple stewardships. With the potential for bias in the stewards' accounts of their own stewardship came the need to establish the credibility of accounting information. The theory of independent attestation was a logical corollary. The audit function emerged.

The great wealth of the Roman Empire warranted the 'hearing' of accounts in order to prevent fraud (Brown, 1979 at p.5). Audits were performed on behalf of the Italian merchants during the 14th century to verify the accounts of the sailing ship captains plying the Old World trade routes for them.

Accounting and auditing have been close 'associates' for so long that the distinctions between them have tended to become obscured.

"A close relationship obviously exists between accounting and auditing as these terms have been defined. Auditing is generally concerned with the accounting process and the systems that facilitate that process as well as the information they generate. In general terms, accounting..... contains the subject matter of an audit.

"Thus in many respects auditing and accounting are inseparable." (Silvoso et al, 1973 at p.7)

The term accounting, in its modern form, is often used to embrace auditing. Hence the terms 'accounting profession' and the 'public accountant' generally describe people who spend the majority of their time auditing.

Accounting and auditing are usually separated for educational purposes. As this study concerns auditing education it will be necessary to explore the relationship between them.

The audit function is seldom possible without a knowledge of accounting, in addition to company, business, and tax law, management accounting, economics, finance, statistics, computers etc. Thus, while accounting knowledge is a prerequisite for the practice of auditing, the two differ significantly. The Cohen Commission on Auditor's Responsibilities noted frequent confusion between accounting

and auditing and maintained that; "In the broadest sense, the discipline of accounting includes auditing." The Commission described accounting as, "...measuring and reporting the effects of economic activities of individual entities". Auditing, they maintained, ".....involves an independent examination to determine the propriety of accounting processes, measurements, and communication. Stated simply, the accountant prepares financial information; the auditor checks it" (Cohen et al, 1978 at p.xiii).

A distinction between accounting and auditing made 17 years earlier by Mautz and Sharaf (1961) shares common ground with that of the Cohen Commission. There is however, one important difference between the views postulated by these two major American works. Mautz and Sharaf suggest that many people regard auditing as a subdivision of accounting because that is how it was first presented when studied, and most auditors are also accountants. This, they maintain, is not correct: auditing is not part of accounting. The two are in fact quite different.

"Many of us tend to think of auditing as a subdivision of accounting, possibly because that is how it was introduced to us when we first studied it and because every auditor we know is also an accountant. As a matter of fact, however, it is quite incorrect to consider auditing to be a subdivision of accounting. Auditing is concerned with accountants first, but it is not part of accounting.

"The relationship of auditing to accounting is close, yet their natures are very different; they are business associates, not parent and child. Accounting includes the collection, classification, summarization and communication of business events..... Auditing does none of these things. Auditing must consider business events and conditions too, but it does not have the task of measuring or communicating them. Its task is to review the measurements and communications of accounting for propriety. Auditing is analytical, not constructive; it is critical, investigative, concerned with the basis for accounting measurements and assertions. Auditing emphasizes proof, the support for financial statements and data. Thus auditing has its principal roots, not in accounting which it reviews, but in logic on which it leans heavily for ideas and methods" (Mautz and Sharaf, 1961 at p.13/4).

The ASOBAC (A Statement of Basic Auditing Concepts) study (Silvoso et al, 1973 at p.7) supports the views of Mautz and Sharaf on the distinction between accounting and auditing by comparing the objectives of the two. They identify four purposes of accounting:

1. Making decisions concerning the use of limited resources, including the identification of crucial decision areas, and the determination of objectives and goals.
2. Effectively directing and controlling an organization's human and material resources.
3. Maintaining and reporting on the custodianship of resources.
4. Facilitating social functions and controls.

The objective of auditing, the committee maintain, is to; "determine the degree of correspondence between that which is audited and established criteria." (Silvoso et al, 1973 at p.7)

Accounting is distinct from auditing. The former is a creative function in the sense of providing financial information. Auditing is essentially an investigative process which adds credibility to financial information. It is this investigative process (as opposed to the background knowledge) that constitutes the discipline of auditing. A police detective, for example, must not only know the law, the psychology of criminal behaviour and so on, but also how to go about investigating crimes. Likewise, an auditor must have a knowledge of the field s/he is investigating in order to conduct an audit.

While early auditing was concerned mainly with the detection of fraud and error, modern auditing is primarily aimed at establishing whether financial information is 'fairly presented'. The detection of fraud and error is now of concern to the auditor in terms of its possible distortion of 'fair presentation'. The shift in the primary aims of the audit function has tended to follow the developments in financial reporting which has increased in sophistication and complexity markedly since the 1950's.

3. THE FOUNDATIONS OF AUDITING THEORY

The term 'auditing education' reflects a fundamental theme of this study. An examination of the nature of auditing as a discipline and subsequently (in Chapter 3) of educational objectives for auditing are, therefore, directed towards exploring the meaning of the term auditing education within the context of this study.

The need for an audit arose out of situations where there was a relationship of accountability, owed by one party to another. Such accountability was based on financial relationships customarily between those providing organisations with resources and those entrusted with the use of those resources. The audit function was required to attest to the credibility of the account by user to provider.

As business organisations grew in sophistication so did the specialised knowledge required to perform the audit. A body of knowledge developed, which, due to the practical nature of auditing was acquired by imitation, through experience. Thus the system of apprenticeship developed as the body of knowledge expanded. This process was true also of disciplines such as law and medicine. Today, however, the

education process reflects the development of a body of theory relating to auditing.

"Experience has given way in substantial measure to induction and deduction; more and more educational preparation in professional schools has become a matter of 'book learning', of fundamentals, theory, principles. Less and less are curricula devoted to the arts of practice." (Roy and MacNeill, 1967 at p.38).

By 1961, when Mautz and Sharaf published the Philosophy of Auditing there was very little literature on auditing theory. Theirs was the first significant work published in this area. As to the suggestion that there was no such literature because there is no theoretical foundation to auditing, Mautz and Sharaf argued that the lack of theory could be explained with reference to the historical development of auditing:

"..... a few illustrations can be cited which indicate that auditing developed as a procedure of detailed checking, in which theory seemed neither necessary nor desirable, and that only recently has it outgrown that stage. Auditing came into existence as the offspring of law and custom which prescribed forms and procedures." (Mautz and Sharaf, 1961 at p.1)

The ASOBAC study, published 12 years later, was ".... an attempt to contribute to the development of a theory of auditing." (Silvoso et al, 1973 at p.1). They maintained that it would provide explanations and rationale for some of the standards that shape auditing procedures.

Mautz and Sharaf were writing from a more pioneering standpoint and consequently tended to take a more expansive, philosophical view on the issue. They hoped that a theory of auditing would contribute towards the solution of some of the problems they were then experiencing. Furthermore, they believed that auditing was a learned profession and as such its members should, ".... have sufficient intellectual curiosity to roll back the frontiers of knowledge to some extent." (Mautz and Sharaf, 1961 at p.5)

In making their case for the need to approach subjects theoretically Mautz and Sharaf argued that, "..... to think philosophically about a subject is to adopt a synoptic view through which the subject can be comprehended in its totality and in relation to the world at large, to consider every issue in the light of aggregate interrelationships, to penetrate beyond casually accepted beliefs to the implicit premises of its reasoning, and to look far ahead in visualising its prospects and goals." (Mautz and Sharaf, 1961 at p.10)

Schandl (1978) suggested that theory is a system of ideas held as an explanation of facts or phenomena. He particularly stressed the structural aspects, his case being that the theory itself required a proper structure if it was

to be useful, and usefulness was a justification for the theory (Schandl, 1978 at p.xiii).

"A number of isolated facts does not produce a science any more than a lump of bricks produces a house. The isolated facts must be put in order and brought into mutual structural relations in the form of some theory. Then, only, do we have a science, something to start from, and analyze, ponder on, criticize and improve." (Korzybski, 1958 at p.55)

4. THE THEORETICAL STRUCTURE OF AUDITING

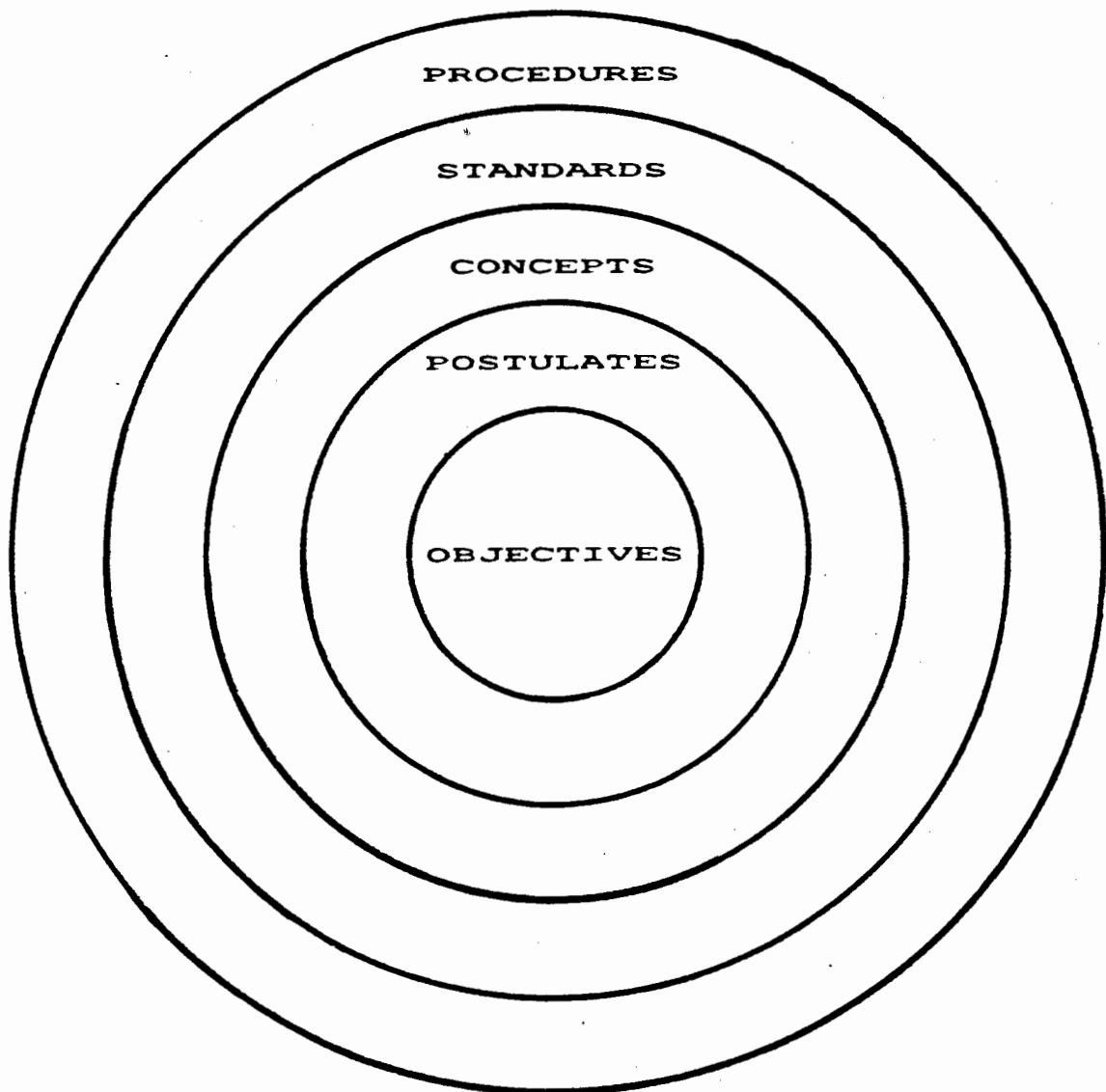
The connection between objectives and procedures in professional practice is necessary for the achievement of auditing efficiencies pressured particularly by economic resistance to continually rising audit costs and the increase in litigation against auditors in recent decades. For this reason it is practitioners, rather than academics who have been at the forefront of re-assessing audit objectives and developing the procedures for achieving them.

The case for a theory of auditing has been submitted. From the theoretical structure illustrated in Figure 2.1, if one accepts for the moment that there is not yet a universally accepted structure or nomenclature, it is clear that between

FIGURE 2.1

THEORETICAL STRUCTURE OF AUDITING

(Based on Mautz & Sharaf's theoretical elements)



objectives and procedures there is theoretical ground. In accepting this, however, the term objective is literally interpreted as meaning; "the point to which operations are directed: a goal, aim." (Chambers 20th Century Dictionary, 1983 at p.871).

It has been argued that without objectives, be they implicit or explicit, auditing could not exist.

"Every audit has to have a purpose. The purpose of the audit determines the judgment (opinion), the norms to be applied, and the evidence to be used. An audit cannot exist if it has no purpose; or if it tries to serve several purposes." (Schandl, 1978 at p.173).

Unlike objectives, however, postulates and concepts are not pre-requisites to the practice of auditing, but, it has been argued, could provide solutions to existing problems, and, if auditing claims to be a learned profession, then its practitioners should have some curiosity about it. It needs a ".... visible means of support in the form of a comprehensive and integrated structure of theory" (Mautz and Sharaf, 1961 at p.5).

Figure 2.1 depicts the central role of objectives in the theoretical structure. In the transition from objectives at the centre to procedures on the outside, postulates provide a theoretical cornerstone as a set of self-evident

assumptions. The Chambers dictionary has defined postulate as, ".... to take for granted, a fundamental principle, a necessary condition." (1983 at p.1004).

Aristotle maintained that, "Every demonstrative science must start from indemonstrable principles, otherwise, the steps of demonstration would be endless." (Aristotle, 1956 at p.199). Mautz and Sharaf (1961 at p.37) argue that postulates ".... occupy the cornerstone position in any edifice of theory". They are assumptions that do not lend themselves to direct verification. Their importance to the theory is that without them nothing further can be established. They are apparent truths.

Mautz and Sharaf (1961), Lee (1982) and Schandl (1978) all suggested a set of auditing postulates, the former authors doing so tentatively. For example; "Financial statements and financial data are verifiable; there is no necessary conflict of interest between the auditor and the management of the enterprise under audit;" etc. (Mautz and Sharaf, 1961 at p.42).

Like Schandl, Lee's work has been obviously influenced by Mautz and Sharaf; he has added to it. Lee outlines three groups of basic company auditing notions, comprising five main reasons for the company audit, five behavioural

foundations and a third group comprising three functional aspects of the audit (Lee, 1982 at p.74 et seq). The relationship between Lee's notions and Mautz and Sharaf's postulates is a noticably close one. Lee has gone a step further by classifying his notions (or postulates) into three groups that enabled him to associate them more effectively with a theoretical structure. (Refer Figure 2.2)

Concepts, or general notions, result from observations of the phenomena or reality of actual things or events and the consequent generalisations based on these observations.

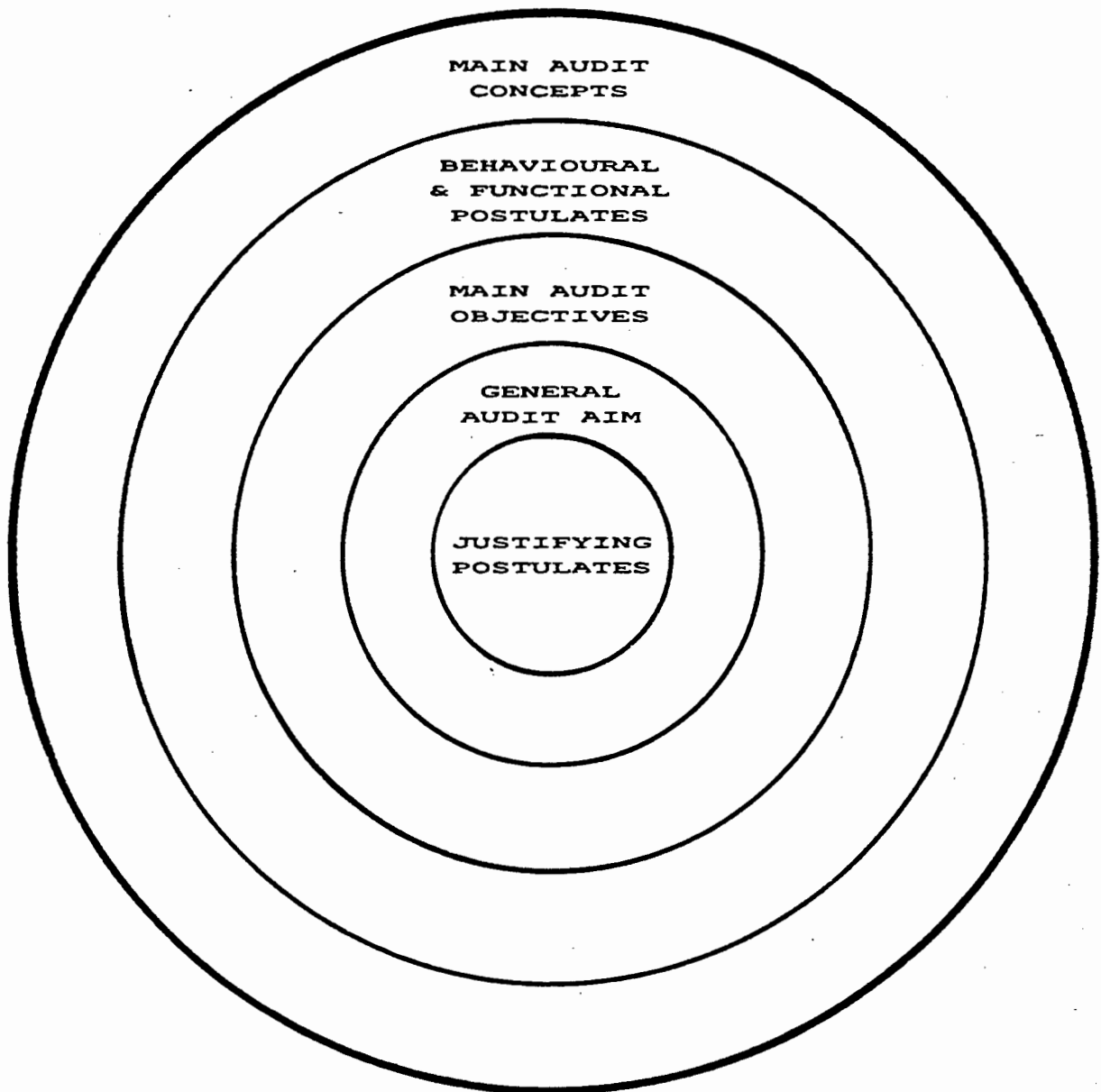
"In the organisation of a fully developed field they [concepts] provide the framework for the remainder of the structure. Concepts generally appear gradually, evolving from crude descriptions into full-fledged generalizations." (Mautz and Sharaf, 1961 at p.53)

Mautz and Sharaf (1961 at p.67) identified five major concepts relating to evidence, due audit care, fair presentation, independence and ethical conduct. Lee (1982 at p.85) combines due audit care and ethical conduct into one of his four concepts, auditor responsibility. Thus, in two of the major works on auditing theory there is a considerable degree of consensus on the basic auditing concepts.

FIGURE 2.2

THEORETICAL FRAMEWORK FOR AUDITING

(Based on Lee's theoretical structure)



Because concepts are derived from observations of reality their connections with actual practice in any particular field is clear. Both Mautz and Sharaf (1961) as well as Lee (1982) have, from the point of establishing the basic concepts, devoted the remainder of their respective texts to a detailed examination of those concepts.

Moving outwards through the rings of Figure 2.1, concepts lead to standards and finally procedures. The relationship between standards and procedures is well articulated by the first statement on auditing standards:

"Auditing standards differ from auditing procedures in that 'procedures' relate to acts to be performed, whereas 'standards' deal with measures of the quality of the performance of those acts and the objectives to be attained by the use of the procedures to be undertaken. Auditing standards concern themselves with the auditor's professional qualities including the judgment exercised by him in the performance of his examination and in making his report." (SAICA statement 3.001, para.12).

An acceptance and understanding of some theoretical framework for auditing as a discipline is necessary for the development of educational strategies. Even if an educational strategy of focussing on auditing objectives and procedures only were to be pursued, careful consideration would have to be given to the omission of postulates and concepts from the educational programme. Without such

consideration educational programmes may be at risk of being randomly devised.

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CHAPTER 3

AUDITING EDUCATION

- 1. INTRODUCTION**
- 2. HISTORY**
- 3. EDUCATIONAL AIMS AND OBJECTIVES**
- 4. CONCEPTUAL VERSUS PRACTICAL EMPHASIS**
- 5. CURRICULUM**
- 6. CLASSIFICATION OF EDUCATIONAL OBJECTIVES**

1. INTRODUCTION

An examination of the term 'auditing education' within the context of this study continues the discussion surrounding auditing as a discipline in Chapter 2. The relationship between stated and inherent course objectives falls within the ambit of auditing education which is to be examined in two distinct parts in this chapter. Firstly, consideration will be given to four important elements of auditing education at South African universities. Secondly, the classification of educational objectives, being fundamental to this study, will be explored in detail.

History, the first of the four elements of auditing education, provides background to the present educational arrangements for auditing as taught at South African universities. The second element addresses educational aims and objectives of auditing courses at South African universities, and, the third element, the conceptual versus the practical emphasis. The focus is on educational aims and objectives generally, attempting, in the process, to clarify the distinction between the two. The conceptual versus the practical emphasis relates to aims and objectives, dealing with the issue in principle first and in relation to the *de facto* situation in South Africa. The fourth element,

curriculum, examines the development of curricula generally and the influences on auditing course curricula at South African universities particularly.

The classification of educational objectives will involve a comparative review of several options, and a critical analysis of the selected option; Bloom's taxonomy of educational objectives.

2. HISTORY¹

The first professional accounting body to be formed was the Society of Accountants of Edinburgh in 1853. It was not until accounting bodies had been established in Glasgow and Aberdeen that the first was established in England; both Liverpool and London formed bodies in 1870 with several other English cities following suit during the ensuing decade. By 1880 these individual bodies had amalgamated to become the Institute of Chartered Accountants in England and Wales.

¹ Historical information on the profession in the United Kingdom is, unless otherwise stated, based on Solomons D, Prospectus for a Profession, Gee & Co., 1974: and in the case of South Africa from Noyce G.E., "The History of the Profession in South Africa", The South African Accountant, March 1954.

Because of South Africa's colonial ties with Britain it was natural that there was a significant British influence on the development of the accounting profession in South Africa. The first professional body in South Africa was established in the Transvaal in 1894 as the Institute of Accountants and Auditors in the South African Republic. A year later Natal formed its own accounting body and the English Society of Incorporated Accountants and Auditors established a branch in South Africa.

The training process originally took the form of a four or five year apprenticeship. In Scotland the professional bodies each administered a final examination until the formation of the General Examining Board in 1892 through which the three bodies jointly set intermediate and final examinations.

In England the first professional examinations were held in 1882 and encompassed bookkeeping and accounts, auditing, insolvency, company and mercantile law. The first recorded professional examinations in South Africa were those set by the Institute of Accountants in Natal in 1899. The other provinces introduced examinations during the first decade of the next century.

Graduate entry into the profession has been an option recognised and encouraged since inception (for example; in allowing a reduction on the period of apprenticeship for graduates). The Scottish profession, from prior to the formation of the General Examining Board to the present time, has always been unique in providing tuition for apprentices.

The English institute subsidised a tuition scheme with mixed success over the years. The Carr-Saunders Committee was appointed by the Minister of Education to investigate education for commerce and related professions, and the respective contributions of universities and colleges in England. It reported in 1949, recommending, inter alia, that the training of accountancy students could involve full-time degree courses at universities and that preparation for the intermediate and final examinations be provided by technical colleges. It also recommended broad studies such as economics and economic history and more specialised vocational subjects. The views of the English Institute were not in accord with those presented by the Carr-Saunders report which was consequently not well received.

The findings of the Parker Committee appointed by the English Institute were published in 1961. Unlike the Carr-Saunders report, the Parker report was well received by the

English profession. Solomons, however, was critical of their findings: "Short of endorsing the status quo in its entirety, the Committee could hardly have gone less far than it did" (Solomons, 1974 at p.26). It appears that the only recommendation of any significance to emerge from their report was the block release of apprentices to attend courses (of three weeks) in preparation for the professional examinations.

Some five years earlier, in Scotland, the Lister Committee (a Special Committee on the Examination and Training of Apprentices) recommended an 'academic year' during the third year of apprenticeship. This would involve university classes in accountancy, law, economics and private study in connection therewith. Some of the negative aspects of the existing part-time study noted by the committee were:

- 1) If held in office hours; the inconvenience to the principal.
- 2) If held outside office hours; the excessive strain this imposed on the apprentice.
- 3) The small amount of time for extensive reading.
- 4) The consequent encouragement of 'cramming' and regurgitation of lectures.

With the obvious 'academic' inclinations of the Lister Committee, and the lack of any significant discord within

the Scottish profession on this issue, it was not surprising that the Dewar Committee recommended in 1966 that "the Institute in the long term, aim at reaching a position where recruitment is mainly through the universities, and, in the short term, made every effort to encourage the recruitment of graduates" (Solomons, 1974 at p.19).

Serving articles of clerkship (apprenticeship) became compulsory in South Africa from 1934. There was recognition of graduate entrants through a two year remission on the period of articles. Considerable effort was expended on the unification of the profession in South Africa up until 1950 when a consensus was reached which led to the establishment of the Public Accountants' and Auditors' Board, by act of Parliament, the following year.

For accounting education in South Africa, 1950 was a year of great significance. Prior to that education was provided by correspondence schools, technical colleges or universities and, since 1921, examinations conducted by the General Examining Board. In 1950 the chartered societies and the universities agreed to coordinate the education of accounting students. Thus, in 1951, the University Training Scheme came into being. "The scheme provided (b) that the universities would provide courses covering the subjects required by the General Examining Board and would maintain a

minimum standard and syllabus content" (Noyce, 1954 at p.15). The General Examining Board of the profession would drop all its examinations except for the final Qualifying Examination. Apart from the PAAB taking over from the General Examining Board in 1957, this arrangement has remained essentially unchanged since its inception.

Although not clearly spelt out at the time (or since), it appears that the profession's motivation for retaining the final Qualifying Examination was firstly to ensure a uniform standard of university graduate, and secondly, to test candidates' fitness to practise professionally. At that time the final Qualifying Examination could not be written before the last year of articles. This changed during the early 1980's when university graduates were allowed to sit the final Qualifying Examination at the beginning of their period of articles.

A comprehensive review of the syllabi by the profession led to the publication of the common body of knowledge requirements (COBOK) in 1969 (National Council of Chartered Accountants, 1969). A major review of COBOK was carried out through the Education Requirements Committee (ERCOM) of the PAAB. Their report (dealt with elsewhere in this study) was published in 1984.

3. EDUCATIONAL AIMS AND OBJECTIVES

Implicit in the preceding review of the historical development of auditing education has been the purpose (or aims and objectives) of that education. The educational process generally requires an understanding of the purpose of any course or programme if educational effectiveness is to be achieved. An aimless educational course may produce interesting and worthwhile results, but the absence of predictable outcomes would be in conflict with the specific needs of the accounting profession evidenced by their history of concern with, and involvement in, the educational process.

Matching educational purpose and outcomes is, therefore, a crucial aspect of the educational process. While there is varied terminology used to describe 'educational purpose', for the purposes of this study, the terms 'aims' and 'objectives' are to be used. The absence of a standard definition of these terms requires that their meanings in the educational context be examined.

The distinction between educational aims and objectives is not altogether clear. The Chambers 20th Century dictionary defines aim as; "....to direct a course: to direct one's intention and endeavours with a view to attainment: an object or purpose aimed at: design: intention:...." (at p.24) and objective as; "..... the point to which operations (esp. of an army) are directed: a goal, aim" (at p.871).

Davies (1976 at pp.12 to 15) addresses the nature of aims and objectives as follows:

"An aim can broadly be defined as a general statement which attempts to give both shape and direction to a set of more detailed intentions for the future."

"Generality,is part of their very nature, and this property should be seen as relating to their function, rather than as a basis for criticising their lack of precision."

"Aims are a starting point. They are an ideal, an aspiration, a direction in which to go. They are visionary in character, and, therefore, in a very real sense unreal." x

"specific objectives are tactical in nature. They are highly explicit and operational in form"

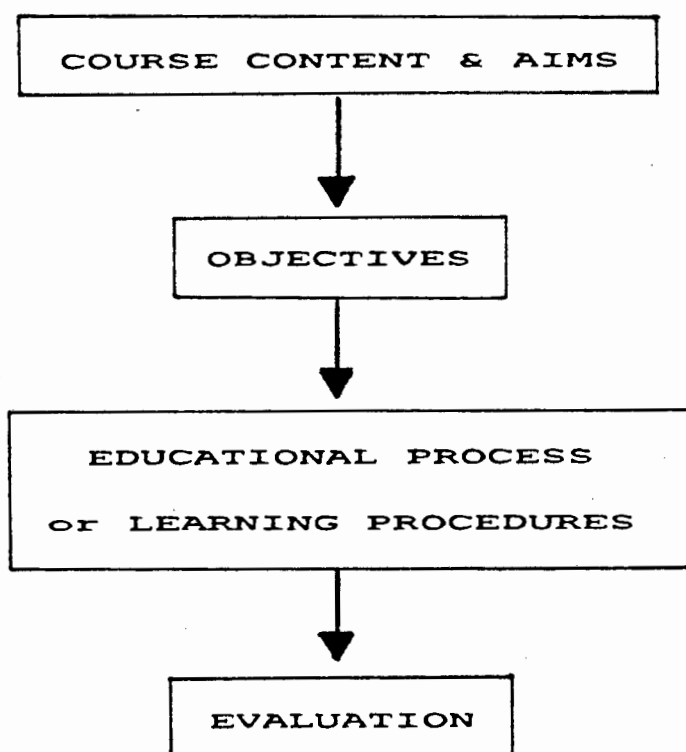
Melton (1982 at p.21) uses the terms 'aims' and 'objectives' and like Davies distinguishes them as general and specific respectively. Kibler and Basset (1977 at p.54) suggest that "Goals communicate general educational outcomes that are long-range, while objectives communicate specific outcomes that are short-range." x

A problem that does arise in attempting to distinguish between aims and objectives on the grounds of specificity is the absence of a benchmark or ultimate measure of specificity in the educational literature that could provide some basis for such distinction. For the purposes of this study, it is deemed necessary to distinguish the two on the basis of specificity. Such distinctions will, therefore, rest on relative rather than absolute degrees of specificity. Thus the aims of auditing education used in this study would be more generally stated than the objectives, and conversely objectives would be more specifically stated than aims.

Given that educational aims and objectives are the same 'ideas' expressed in different degrees of specificity (or generality), it follows that, through a process of either deduction or induction, as the case may be, each represents the other.

Maciver (1974 at p.42) suggests that the meaningful use of educational objectives requires a framework within which the component parts interact, such as that illustrated in Figure 3.1.

As this study will focus on the use of 'objectives' in auditing education, the inter-relationship between aims and

FIGURE 3.1EDUCATIONAL COURSE FRAMEWORK

objectives, as discussed, will be assumed. Thus reference will be made to objectives with little or no further reference to aims.

Two similar definitions of educational objectives have been selected because they are appropriate to the nature (and emphasis) of auditing courses at South African universities.

Mager (1975 at p.7) defines 'instructional' objectives as:

".... a statement describing an instructional outcome, rather than an instructional process or procedure. It describes results, rather than the means of achieving those results."

Davies (1976 at pp.14 & 15) is also a strong proponent of clearly expressed educational outcomes:

"Specific objectives attempt to describe, in the clearest terms possible, exactly what a student will think, act or feel at the end of a learning experience."

The discussion on the conceptual and practical influences on auditing education under 4 below elaborates on the appropriateness of these definitions.

4. CONCEPTUAL VERSUS PRACTICAL EMPHASIS

An important issue facing auditing educators in formulating educational objectives is that of the balance between the conceptual as opposed to the practical emphasis (or the theoretical as opposed to the technical). The vocational origins of the auditing discipline and the relatively recent development of its theoretical foundations make this a particularly pertinent educational issue.

The practice of auditing has been formally recognised for more than a century, and in existence in some form for many centuries before that. Auditors acquired their skills through apprenticeship. It was the pioneering work of Mautz and Sharaf (1961) which first made a case and advanced a theoretical foundation, for auditing. Auditing theory is in its infancy in relation to the 'ancient' practice of auditing. It has only been since the early 1960's that any theory and practice dichotomy has emerged.

From an educational perspective; while a tension between theory and practice is implied, there is no question of mutual exclusivity. These two elements may be, and usually are, combined in differing proportions to produce a course emphasising one more than the other. Texts such as those of

Mautz and Sharaf on the one hand and Stettler on the other typify the range from theoretical to practical. Extracts from the table of contents of these two texts (refer Table 3.1) provides some perspective on the two positions.

The Philosophy of Auditing is structured on five major concepts in auditing: evidence, due care, fair presentation, independence and ethical conduct (chapters 5 to 9). These underlie everything the auditor does and, in a professional sense, is. The 'Systems-Based Audits' text is, in some respects, similar. It is concerned with professional behaviour (chapters 1 and 3) as well as with what the auditor does (chapters 9 to 20). In the latter instance, the major difference between the two texts is that 'Systems-Based Audits' provides a descriptive analysis of the audit process while the Philosophy of Auditing is concerned with the theory and principles underlying the audit process.

Mautz and Sharaf (1961 at p.1) represent a standpoint with a clearly theoretical emphasis:

"Many think of auditing as a completely practical, as opposed to theoretical, subject. To them, auditing is a series of practices and procedures, methods and techniques, a way of doing with little need for the explanations, descriptions, reconciliations, and arguments so frequently lumped together as "theory".

"It is our contention that there is a theory of auditing, that there exist a number of basic assumptions and a body of integrated ideas, the

Table 3.1

**COMPARISON OF SELECTED CONTENTS OF TWO AUDITING TEXTS
REPRESENTING THEORETICAL AND PRACTICAL EMPHASIS RESPECTIVELY**

Mautz & Sharaf (1961)

Stettler (Fraser and Maxwell, 1986)

The Philosophy of Auditing

- 1 Towards an auditing philosophy
- 3 The postulates of auditing
- 4 Concepts in auditing theory
- 5 Evidence
- 6 Due audit care
- 7 Fair presentation
- 8 Independence
- 9 Ethical conduct
- 10 Auditing in perspective

Systems-Based Audits

- 1 About audits and auditors
- 3 The auditing profession and its ethical and legal responsibilities
- 5 Elements of the audit process
- 9 The auditor's report
- 12 EDP systems; internal control
- 15 Purchases, expenses and accounts payable
- 16 Cost of sales and inventories
- 17 Cash: receipts, disbursements, balances
- 20 Completing the audit fieldwork;

understanding of which will be of direct assistance in the development and practice of the art of auditing."

In their study for the American Institute of Certified Public Accountants (AICPA), Roy and MacNeill (1966 at p.2) clearly support a conceptual emphasis;

"..... we have sought to value conceptual understanding over procedural skill. It would be easy to require the beginning CPA to know how to calculate a standard deviation, but it is much more important for him to understand the meaning of the concept. It would be easy to require the beginning CPA to be competent in the techniques of accounting for depreciation, but it is much more important to specify that he understand this complex subject. Ability to apply techniques is easy to specify and easy to test; conceptual understanding is much more elusive, both to impart and to ascertain."

In South Africa auditing education has been influenced by the profession through the historical relationship established by the University Training Scheme in 1951, and since then through the common body of knowledge requirements and their examination through the Qualifying Examination. Maguire (1980 at pp.115/6) observes:

"That there is a close relationship between the accounting profession and the universities cannot be disputed, but the extent to which the P.A.A.B. has and does influence accounting education at the universities should be evaluated in the context of the historical development of the relationship between the profession and the universities. This reveals that the universities have accepted the role dictated by the needs of the professional bodies; the role has essentially been a passive

one. It is not denied that innovations have been made, but these have largely been within the framework laid down by the profession."

The nature of this influence is suggested by Wolman (1976 at p.214):

"There can be no doubt that the Final Qualifying Examination has resulted in the approach at universities becoming more technique-oriented."

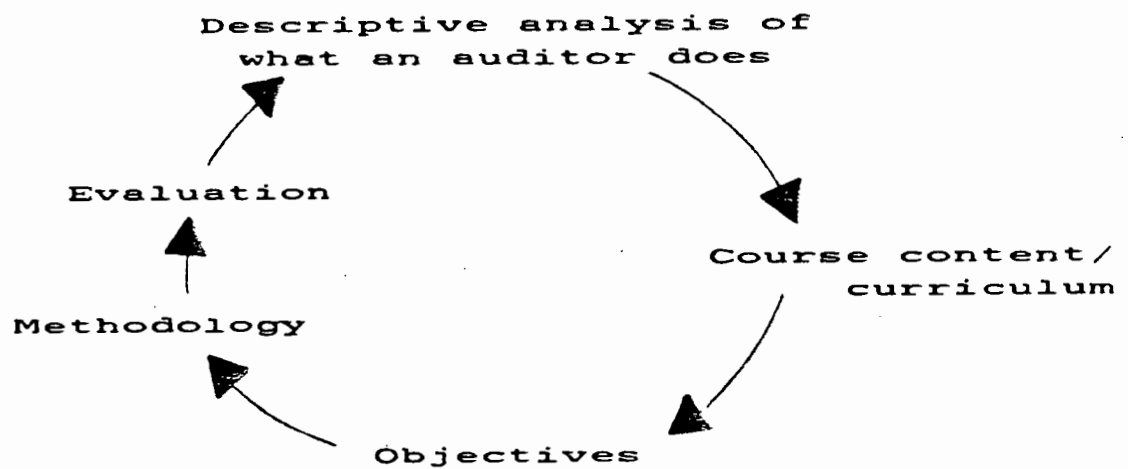
It is interesting to note the assumption of influence over the universities by the profession as reflected in the ERCOM report (1984 at p.3): "The contents of these syllabuses are to be examined in the qualifying examination (QE) and it forms the core of knowledge on which the accountancy curricula of the universities participating in the Board's education scheme are to be based."

Given that there is considerable professional influence, and hence a practical (technique-oriented) emphasis on auditing courses at South African universities, the formulation of educational objectives would tend to be based primarily on what the auditor does in practice.

A process for formulating educational objectives and curriculum, subsidiary and supplementary to that illustrated in Figure 3.1, based on a course with practical emphasis is illustrated by the framework suggested in Figure 3.2.

FIGURE 3.2

PROCESS FOR FORMULATING OBJECTIVES
& CURRICULUM BASED ON PRACTICAL EMPHASIS



There is clearly a range from conceptual to practical on which auditing courses may take their place. This has been illustrated by the contents of the two texts typical of each approach (refer Table 2.1). It is equally clear that there have been, and still are, strong practical influences on auditing courses at South African universities due largely to the nature of the relationship between the universities and the profession in South Africa.

5. CURRICULUM

Formulation of educational objectives and curriculum are, or should be, inter-related processes. Davies' observation that "Educational objectives reflect a curriculum " pertains (Davies, 1976 at p.30). Given the influence of the profession on the universities, and the consequent practical emphasis on auditing courses, it follows that the curriculum for such courses would arise out of what the auditor does (and the professional environment in which s/he exists).

This approach is borne out by the ERCOM report (1984 at p.5):

"Ercom began its task by researching the nature of accountancy as a discipline, and the characteristics of a profession in general and the accounting profession in particular. It then prepared a profile of the services which a South African chartered accountant is expected to be competent to perform."

"The Committee then proceeded to prepare a curriculum to equip the prospective chartered accountant to perform these functions competently."

While the starting point in the process illustrated in Figure 3.2 would logically be the descriptive analysis of what the auditor does, the procedure should be both circular and continuous (at least until a satisfactory set of educational objectives and curriculum has been established). What the auditor does is the obvious starting point, with a circular 'purification' process to the point where there is logical consistency among the elements of the model.

That the profession in South Africa has a strong influence over education at the universities has been discussed. In terms of curriculum there is the prescriptive influence of COBOK with the compelling incentive for participating universities to be seen to 'perform well' (through their immediate past graduates) in the Qualifying Examination (based on COBOK).

"Not only is it clear that the syllabi laid down heavily influence the teaching at universities, but the content of the qualifying examination is closely watched by academics who seek guidance in

interpreting the common body of knowledge requirements." (Maguire, 1980 at p.117)

The high degree on congruence between the profession and the universities on curriculum is due not only to the nature of their relationship, but also to the collaboration between these groups on the ERCOM study of 1984. The detailed syllabi in the ERCOM report were originally drafted by working committees of the South African Society of University Teachers of Accounting (SASUTA) and presented to ERCOM for review. Separate working committees were constituted for each of the five subjects, consisting of SASUTA members engaged in the teaching of those subjects. The five academic members of ERCOM served as chairmen of these working committees. All universities participating in the PAAB's education scheme were involved in the project. (ERCOM, 1984 at p.6) A summary of the ERCOM auditing syllabus and its related objectives is produced in Appendix E.

The central theme of curricula with a practical emphasis is 'what an auditor does'. The variations on this theme tend to be minor. The greatest scope for variations between courses is in the educational objectives and their relative conceptual or practical emphasis.

6. CLASSIFICATION OF EDUCATIONAL OBJECTIVES

6.1 Four Models

A standard basis for classifying (or labelling) educational objectives in this study was necessary in order to compare stated and inferred auditing course objectives.

Several classification systems or models have been developed over the years by both educationists and psychologists. The purposes for which these models were developed have ranged from elaborate studies, aimed at identifying components of the human intellect, to simple curriculum design aids.

In the search for a classification system four models were studied, namely; Bloom's Taxonomy (Bloom et al, 1956), Guilford's Structure of Intelligence (Guilford and Hoepfner, 1971), Gagne's Conditions of Learning (Gagne, 1967), and the Gagne/Briggs Model (Gagne and Briggs, 1979). Bloom's Taxonomy, the oldest and best known of the taxonomies, was selected for use in this study.

All four models are briefly reviewed and Bloom's Taxonomy scrutinized with a view to considering its shortcomings and

measuring its suitability in relation to three important criteria.

Bloom's taxonomy.

The idea of developing a classification system for educational objectives was proposed at a meeting of college examiners attending the 1948 American Psychological Association Convention in Boston. Interest was expressed in developing a theoretical framework to facilitate communication among examiners and stimulate research on examining in education. It was felt that a theoretical framework could best be developed through a system of classifying the goals of the educational process.

Educational objectives were to be expressed in 'behavioural' form to meet the criterion of being observable in the behaviour of individuals. It was decided to develop a taxonomy of educational objectives based on educational, psychological and logical principles. Of prime importance would be educational considerations. Classifications would, therefore, be based on the distinctions teachers rather than psychologists would make in studying human behaviour. The justification for this bias was that one of the major benefits sought by the study was the improvement of communication among educators.

The taxonomy is designed to classify student behaviours representing the intended outcomes of the educational process. It assumes that essentially the same student behaviours would be evident, regardless of the educational level.

The taxonomy was developed by gathering a large list of educational objectives from participating educationists and the literature. The behavioural portion of these objectives was extracted and then divided into groups on an experimental basis. Cognitive objectives were divided into behaviours from the simplest to the most complex. There followed attempts to classify these objectives into defined groups so that a workable taxonomy would be created. The main classifications finally emerging from this process were:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

For each of the classifications, except application, a number of sub-classifications are defined. This has resulted in 21 different classifications falling within the six groups.

Understanding this taxonomy from these six classifications only is not possible. Reference to the sub-classifications and their definitions is essential for understanding and, more importantly, using the taxonomy. A working summary of Bloom's taxonomy is reproduced in Appendix B.

Bloom observed a number of characteristics (and limitations) of the taxonomy. Three of these warrant mention. Firstly, no clear distinction is possible among the behaviours. Thus a particular educational outcome or behaviour may fall partly into two different classifications. As a result the taxonomy has attracted criticism for its 'vagueness'. Bloom claimed deliberate efforts towards a generality that would foster universal applicability.

Secondly, it was claimed that the taxonomy was cumulatively hierarchical. That is, some measure of increasing complexity is claimed to apply to the taxonomy, from knowledge as the least 'complex' to evaluation as the most 'complex'; and, that the higher levels incorporate the lower levels of the taxonomy. This is consistent with the idea that the learning

experience is intended to change the student's behaviour from a simple to more complex type. The latter then must include the former.

Empirical studies carried out by Bloom (1956 at p.19) at the time neither proved nor disproved the cumulative hierarchical claim:

"Our evidence on this (hypothesis) is not entirely satisfactory, but there is an unmistakable trend pointing towards hierarchy of classes of behavior which is in accordance with our present tentative classification of these behaviors".

These findings are more specifically and convincingly dealt with in later research carried out by Kropp, Stoker, Madaus and others (Seddon, 1978 at p.320). It would, clearly, be possible to create knowledge-type questions of considerably greater difficulty than an evaluation-type question. A question of the former type may require the recall of unusually obscure or complicated facts, while an evaluation-type question may demand only relatively simple judgmental powers.

Thirdly, and most importantly, the educational and experiential background of the learner may change a problem that is complex for one learner into a simple problem for another. For example, where two students have to solve an algebra problem. The first student solves the problem from

memory, having practised identical problems in class previously. The other student has never encountered the problem before and must reason out the solution by applying general principles and logic. This introduces an important element; in using the taxonomy the educational and experiential background of the student must be considered.

Bloom's was one of the first major educational taxonomies to emerge. During the 30 years of the taxonomy's existence, it has stimulated considerable research, much of it founded on constructive criticism. Its producers have recognized some of its limitations and critics have articulated others. (Some of these are discussed further under 6.2 below.)

Guilford's Structure of Intelligence.

This study (Guilford and Hoepfner, 1971) was conducted by a team of psychologists with the Aptitudes Research Project (ARP) at the University of Southern California over a period of 20 years from 1949 to 1969. The study was aimed at discovering intellectual abilities. It investigated the basic intellectual functions or processes.

"One demand was overriding - to achieve a taxonomy of intellectual functioning with ability concepts that are invariant over marked changes in analysed test batteries and moderate changes in subject

populations". (Guilford and Hoepfner, 1971 at p.xi)

A 'Structure-of-Intellect' (SI) theory and model was developed. This involved a three-dimensional classification of 120 hypothetical intellectual abilities or functions.

Guilford's Structure of Intelligence, with its 120 different classifications, was considered too complex for the purpose of this study. As a model developed by psychologists to identify the components of the human intellect, it is a significant work. It was, however, not developed for use by educators as a means of framing or communicating educational objectives. The task of learning to use it would, in itself, involve a considerable commitment.

Gagne's Conditions of Learning.

In this study Gagne (1967) distinguished 8 different classes of learning conditions.

"The implication is that there are eight corresponding kinds of changes in the nervous system which need to be identified and ultimately accounted for. Each of these may involve different initial states or different structures, or both."
(Gagne, 1967 at p.47)

Gagne's description of the factors that determine learning are based, wherever possible, on controlled experimentation. He hoped to be able to differentiate several kinds of learning with each requiring a different set of conditions for its occurrence.

While Gagne's Conditions of Learning ably meet the requirements of a hierarchical taxonomy, they are too comprehensive for the purposes of this study in the sense of covering a broad spectrum of educational outcomes. Only at the fifth of eight conditions do they begin to relate to the educational objectives of university auditing courses. Unlike Guilford's model, the Conditions of Learning lacks usable detail within each condition.

The Gagne/Briggs Model.

In their book on Principles of Instructional Design, Gagne and Briggs (1979) present a model consisting of five educational outcomes; namely,

1. Intellectual skills
2. Cognitive strategies
3. Verbal information
4. Motor skills

5. Attitudes.

Although fundamental to the instructional design principles developed throughout the book, the development and discussion of the model occupies approximately one fifth of *Principles of Instructional Design*. Gagne, by 1967, had already published his own model. Gagne's original model represented a learning sequence rather than the taxonomic classification of educational outcomes. The Gagne/Briggs model is, in some respects, similar to Bloom's taxonomy, although Bloom only dealt with the first three categories of the Gagne/Briggs model in his book on the cognitive domain. Motor skills and attitudes (affective learning) were to be dealt with separately in later works by Bloom. Thus the first three categories of the Gagne/Briggs model, namely, intellectual skills, cognitive strategies and verbal information, cover Bloom's cognitive domain represented by, knowledge, comprehension, application, analysis, synthesis and evaluation.

Gagne and Briggs maintain that their categories of learned capabilities can be differentiated because of the distinct categories of human performance to which they relate. A further distinguishing feature is that, for learning to occur, different arrangements of conditions are required for each.

In a doctoral thesis analysing the learning objectives inferred from the uniform Certified Public Accountancy (CPA) examinations in America, Wegman (1979) considers a number of taxonomic models for the task, including the four reviewed above. The criteria which Wegman applied in selecting a taxonomy suitable for his study were taken from Milton Friedman's criteria for an efficient filing system, namely; are categories clearly and precisely defined? Are they exhaustive? Are items jointly filed together? (Wegman, 1979 at p.31). These criteria were considered appropriate to the nature of the uniform CPA examination. Wegman chose the Gagne/Briggs model because it, "...meets, for the most part, Friedman's criteria for an efficient and effective filing system..." (Wegman, 1979 at p.31).

Two important differences exist between the subjects of Wegman's study and this study. Firstly, the major portion of the CPA examinations are in the form of objective test questions whereas only an insignificant portion of the auditing examination questions set by the various South African universities are in this form. Secondly, Wegman's study was concerned with a 'uniform' examination set by a single examining body while this study involved 17 different universities and over 30 different auditing courses. Thus the specificity sought by Wegman is matched by the

generality required to accommodate the lack of 'uniformity' in the subject matter of this study.

The Gagne/Briggs model was considered a second choice, after Bloom's taxonomy. This decision was founded not so much on the unsuitability of the former model, but rather on the suitability of the latter.

6.2 A Scrutiny of Bloom's Taxonomy

The process of selecting the taxonomic model most appropriate to this study involved finding the best match between the qualities of the available models and the particular needs of this study. These needs are clear; such a model is required to function as a standardized basis for labelling the educational objectives of auditing courses at South African universities.

To function as desired, the model selected would have to relate to the nature of auditing course objectives, be capable of use without a major learning commitment and result in the standardized classification of objectives in different auditing courses.

In considering its selection, Bloom's taxonomy was measured against the following criteria;

- (a) Compatibility: Are the characteristics of the selected model likely to match the nature of the educational objectives to be labelled?
- (b) Comprehensiveness: Is the model sufficiently comprehensive to enable meaningful classifications?
- (c) Usefulness: Does application of the model require expertise not generally possessed by those persons required to use the model for this study?

Being one of the oldest and most used of the educational taxonomies, it is understandable that Bloom's taxonomy, (the taxonomy), has attracted a good deal of academic scrutiny. It is also probable that the research stimulated by the taxonomy over the past three decades has exceeded Bloom's original expectations.

Compatibility:

The question of compatibility, is concerned primarily with the characteristics of the taxonomy.

The claimed hierarchical characteristics of the taxonomy have attracted both attention and criticism. It is not certain whether a lack of the claimed cumulative hierarchical attributes of the taxonomy would detract from its viability as a classification tool. However, internal inconsistencies within the taxonomy could raise serious questions about its effectiveness.

In 1978 Seddon reviewed several investigations into the existence of the cumulative hierarchical properties of the taxonomy. He concluded that the most meaningful results supporting the cumulative hierarchical proposition were obtained by Kropp and Stoker in 1966 using simplex analysis and Madaus et al in 1973 using multiple regression analyses (Seddon, 1978 at p.320). In both of these investigations it was concluded that knowledge, comprehension, application and analysis were in the correct relative order while synthesis and evaluation were not correctly placed. Madaus et al suggested that the taxonomy's cumulative hierarchical structure could be depicted by a 'Y' structure, with the anomalies of the two upper levels represented by the fork. The results of these studies are not, however, conclusive.

Ormell argued that "...many of the categories overlap, that the place of a particular behaviour in the hierarchical order will sometimes depend crucially on the prior history

of the student, and that in places inversions of the normal hierarchical order may be expected to occur" (Ormell, 1974 at p.7). This meant, for example, that performance at the knowledge level could be more complex than at the evaluation level. However, as with Kropp, Stoker, Madaus and others, it was the hierarchical distinction between synthesis and evaluation that Ormell particularly disputed. In comparing the relative attributes of the writer (creator) and the literary critic (evaluator), Ormell argued that; "No one would seriously contend that the performance-linked mental operations of the critic embody and transcend those of the writer" (Ormell, 1974 at p.5). He suggested abandoning the principle of organization by complexity in favour of six parallel taxonomic categories, each with its own scale of complexity (from 1 to 6). This would facilitate the much needed distinction between levels of complexity within each taxonomic category. One could then logically argue that a high level comprehension question may be more complex than a simple evaluation problem. The 6 by 6 matrix (taxonomic categories by levels of complexity) would facilitate a 'weighting' of educational objectives.

The two major issues arising are that inversions of the hierarchical order of the two upper classifications can occur, and that the student's prior learning experience would influence taxonomic classification. Inversions of

synthesis and evaluation do not pose a particular problem to this study as the major distinctions are between three groups of classifications: (1) knowledge and comprehension; (2) application; (3) analysis, synthesis and evaluation. The problem of the learner's prior experience is not overcome by any of the available taxonomic models so that this state should be assumed to be "average" or "neutral" in the absence of specific information.

Neutrality is an important philosophical quality of any taxonomy. It concerns the relative worth of educational goals. Relative worth, in turn, reflects the ethos of the societal context in which it is judged. In developing the taxonomy, Bloom aimed at a purely descriptive scheme representing all kinds of educational goals. Furst (1981 at p.441) suggests that the taxonomy could not be philosophically neutral because it pointedly ruled out educational objectives that could not be specifically defined as intended human behaviours.

Ormell is more specific in suggesting that the inherent values embodied in the taxonomy are "materialistic". The student is always in some way presented as handling material and that the categories subtly reflect the ethos of a product orientated society. He relates, for example, types of jobs with taxonomic categories, so that a politician's

job involves evaluation, a manager would be involved in application, and an unskilled man in knowledge.

"One might describe the taxonomy, therefore, as being predisposed to fit a pragmatic, materialistic, meritocratic view of society, in which few profound questions of value arise, and in which explicit evaluation is always expected and preferred." (Ormell, 1974 at p.6)

While criticism of the taxonomy on the grounds of its limited philosophical universality is important, it serves, in this case, as reinforcement of the match between the taxonomy and the courses to be classified in this study.

Comprehensiveness:


Comprehensiveness concerns the extent to which the taxonomy facilitates the classification of educational objectives in the cognitive domain.

Ormell's major criticism on the comprehensiveness of the taxonomy is that it omits an important taxonomic category - imaginative understanding - manifest through a continuity of fluent responses to 'if...then' questioning. Bloom was concerned with measuring educational outcomes and was consequently not in favour of including understanding because he believed it to be too difficult to measure with sufficient precision. But Ormell maintained that, ".... any

difficulty which may be encountered in producing a behavioural analysis of 'understanding' is not relevant to the central issue. The central issue is: What are the general objectives of education? To exclude 'understanding' from the very beginning as a general objective, on grounds of imprecision, is to evade the central issue." (Ormell, 1974 at p.5)

Ormell concentrated on mathematics in 'rigorously' testing the taxonomy. In this regard he maintained that there is, "...a glaring mismatch between the (lack of) precision of the classification and the precision of the subject being classified." (Ormell, 1974 at p.7) Ormell's thesis was essentially philosophical while Bloom's was clearly a more technical exercise. The main thrust of Ormell's subsequent research was aimed at the establishment of a workable definition of imaginative understanding as an educational objective.

Furst argues that the 'artificial' separation of the cognitive, affective and psychomotor domains gives rise to the omission of outcomes such as receptivity, sensitivity, skill in observing, data gathering etc. He concludes that, "... by following a wholly process-oriented approach to the objectives of education, we have supposedly lost the essential characteristics of an educated person: that he or



she possess a rational, connected view of the world" (Furst, 1981 at p.446).

While both Ormell and Furst have identified important limitations of the taxonomy, these relate to the use of the taxonomy for implementing educational philosophy through educational objectives and course design.

"The taxonomy, after all, is only a classification - a card index, as it were - to the library of behavioural objectives. Consequently, its logic is that of a classification related to use in the assembly and sorting of relevant objectives rather than to the ordering of these objectives for classroom use." (Ryba and Drake, 1974 at p.10)

One would, therefore, have to look beyond the taxonomy to incorporate imaginative understanding and achieve a connected view of the world. The limitations cited do not affect the use of the taxonomy as a classification medium. Furthermore, the imaginative understanding called for in auditing is considerably less than that required in the more creative fields. Synthesis and evaluation have proved adequate for classifying auditing course topics.

Usefulness:

On the criteria of usefulness and acceptability, Furst (1981 at p.448) observes that Bloom's taxonomy has certainly excelled. Over one million copies of the book have been

sold; it has been translated into several languages, used worldwide and cited thousands of times. It has been used for numerous applications, and, as Furst maintains, this would take a separate article to document fully.

The extensive usage of the taxonomy would support the contention that it is workable. However, Furst concludes that it should, in view of the criticism levelled against it, be used with caution. He suggested that the development of educational taxonomies could be more useful if related to the subject domain in which they are intended to be used. Educators have experienced difficulty in imposing the structure of knowledge incorporated in the taxonomy on their particular disciplines. Ormell experienced this problem in his application of the taxonomy to mathematics.

"The attempt to apply the taxonomy rigorously in mathematics is, in the author's view, crucial: because here the contrast between the blurred and unsatisfactory nature of the imposed classification and the subject matter is most clearly seen." (Ormell, 1974 at p.7)

While accepting the taxonomy as a laudable attempt, Rathes believed the mental processes to be too complex and overlapping to lend themselves to neat categorization (Furst, 1981 at p.449). The inherently philosophical character of any educational taxonomy, Furst believed, meant

that ultimately no single taxonomic scheme would emerge as a universally useful educational tool.

Many uses of the taxonomy will remain unrecorded. However, in spite of the considerable criticism of the taxonomy, even some of the severest critics had something positive to say for it. "Bloom and associates' modest ambition was a step towards clarification. The enormous influence exercised by their imperfect tool proves that it answers a deep and urgently felt need" (De Landsheere in Furst, 1981 at p.450).

Poole (1971 at p.380) has noted that research by ".... Kropp, Stoker and Bashaw (1966), Milholland (1966), Smith (1968,1970), Smith and Patterson (1965), and Stoker and Kropp (1964) has yielded findings that are more supportive than nonsupportive of the Taxonomy."

Bloom's study produced a taxonomy of educational objectives founded on educationists' views of observable student behaviours. It aimed to improve communication amongst educators and stimulate research on examining in education. There is considerable evidence to support its success on the latter aim. It was pioneering work. Its success as a means of communication in education will remain a matter of subjective opinion. It is probable that much of its success in this regard has gone unpublished.

"In the area of assessment and, possibly to a lesser extent, in curriculum development, it [Bloom's taxonomy] has been a powerful influence. The obvious advantages of such an approach are that it is student-centered, that it proposes clear-cut goals and that these goals are to be reached by way of observable, and frequently measurable, behaviours. Its influence is already widespread in testing, e.g. in examination syllabus construction, examination construction and marking." (Ryba and Drake, 1974 at p.1)

In the absence of a more suitable model for the task at hand, and in spite of its weaknesses, Bloom's taxonomy was considered to best meet the requirements of this study, primarily due to its characteristics of compatibility, comprehensiveness and usefulness.

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CHAPTER 4

AUDITING COURSE OBJECTIVES: STATED AND PREFERRED

1. INTRODUCTION

2. THE SURVEY

- 2.1 Questionnaire design
- 2.2 Populations and samples
- 2.3 Responses

3. STATISTICAL ANALYSIS

- 3.1 Statistical packages
- 3.2 Testing data
- 3.3 Taxonomic groups
- 3.4 Topic groupings
- 3.5 Individual objectives

4. CONCLUSION

1. INTRODUCTION

A survey, primarily by means of questionnaire, supplemented by interviews with certain key respondents, was carried out among South African universities teaching auditing and the larger firms of auditing practitioners.¹

Universities were surveyed in order to establish their 'stated' auditing course objectives so that these could be compared with the related course objectives 'inherent' in examination questions.

Auditing practitioners were surveyed to establish what they considered desirable educational objectives for auditing courses at South African universities. The reasons for this were two-fold. Firstly, there was the general question of congruence between the universities stated auditing course objectives and those preferred by auditing practitioners. The justification for seeking the views of the latter group are that they represent major employers of university graduates and, as individuals, they represent past students of various vintages. Secondly, there is extensive influence exerted on universities participating in the PAAB's training

1 Reference to the 'larger' audit firms include the following firms: Pim Goldby; Deloitte; Arthur Young & Co.; Cooper and Lybrand; Arthur Anderson; Price Waterhouse; Ernst and Whinney; Peat Marwick; and Aiken and Carter.

scheme by the profession (refer Chapter 2 for detailed discussion). In view of this, it follows that the contextual relevance of auditing course objectives would be determined primarily with reference to what auditing practitioners (i.e. the profession) considered 'desirable' objectives.

The survey will be discussed in terms of the data gathering methodology employed. The statistical packages, the testing of data, a description of analyses and their results will be dealt with. Responses to the questionnaires from universities and practitioners will be analysed to establish the collective responses of each group to auditing course objectives. The inter-relationship between the two respondent groups will also be investigated to establish the degree of accord. Through various groupings of the objectives their nature and characteristics will be further examined. Mean scores and standardised (Z-) scores are the main bases of measurement.

All information obtained from universities on stated course objectives relates to the 1983 academic year.

2. THE SURVEY

2.1 Questionnaire design

Copies of the questionnaires used for Universities and auditing practitioners are included in Appendix A. These two questionnaires differed in only one respect: University respondents were asked how representative each given educational objective was of their own university's auditing courses' objectives. (For the purposes of responding to the questionnaire, respondents were asked to consider all the auditing courses offered by their university as though they were one course.) Practitioners, on the other hand, were asked to indicate how representative each given objective was of what they believed the universities' auditing course objectives should be. These two views have been referred to as 'stated' and 'preferred' objectives respectively.

Questions regarding the ranking of five suggested course aims were similarly differentiated between universities and practitioners. (Aims were included in the survey questionnaire for exploratory purposes and were incidental to the objectives of this study. The implications arising from the responses to questions on aims are discussed in Chapter 7.) One other difference between the two questionnaires concerned the personal data requested of

practitioners in order to explore the characteristics of various respondent groups.

Part I of the questionnaire dealt with the aims of auditing courses. Five different aims were offered and respondents requested to rank these in order of educational importance, with 1 high and 5 low. The option of adding another of their own choice was provided.

Part II of the questionnaire dealt with detailed auditing course objectives. The methodology employed was to present respondents with 34 possible auditing course objectives. Each of these was a question in the sense that respondents were being asked to indicate the degree (from 1 to 10)² to which each objective was, in the case of universities, representative of their own auditing course objectives, and in the case of practitioners, preferred as desirable auditing course objectives.

Respondents, while constituting two well defined, and generally homogeneous groups, were subject to some degree of heterogeneity. There were, at least, likely to be semantic differences between the course objectives of the 18

2 The scale effectively represented the percentage ranges; 1 = 0 to 10, 2 = 11 to 20 etc., although percentages were sometimes used for statistical analysis, they were generally not necessary.

universities.³ In addition, 96 practitioners spread throughout the main centres of South Africa, and graduates of a variety of South African universities over the past three decades were to be questioned. Consequently, three features of the questionnaire considered necessary for the purposes of this study were:

- 1 Comprehensiveness. It was necessary that, as far as possible, the questionnaire include all the auditing course topics of the 18 different universities.
- 2 Convenience. To achieve 1 above would require that a certain amount of detail would have to be foregone if the questionnaire was to be kept to a length that would not discourage respondents from completing it.
- 3 Generality. A degree of generality was the result of a compromise between comprehensiveness and detail and took two distinct forms. Firstly, the major auditing topics, such as systems and controls, testing and reporting, were separately articulated while a number of the other topics were combined under 'Specialised Topics'. Thus, the number of separate topics was limited to ten. Secondly, in the framing of individual objectives, wording that was likely to be more generally used and understood was opted for in preference to wording that may have,

³ It is possible that some of the university respondents had no written course objectives. This issue was not investigated.

for example, been specific to a particular university. (Table 4.1 refers.)

Topics (i.e. the 10 topic headings used in the questionnaire) were intended, as far as possible, to be relevant to all the universities concerned. To this end, the curriculum investigations being carried out by the PAAB's Educational Requirements Committee (ERCOM) at the time reflected some degree of national consensus among South African universities on, inter alia, the objectives and content of university auditing courses. Due to the involvement of most South African universities in the ERCOM investigations, their curricula provided a guide to the typical auditing course structure that was likely to be understood by the universities and practitioners.⁴ Other influences on the topics selected for the questionnaire were auditing texts such as Robertson (1979), Stettler (1977) and Taylor Kritzinger and Puttick (1983), together with the author's own experience of teaching auditing at South African universities.

The resulting questionnaire comprised 34 objectives organized under 10 topic headings. Examples of topic components were given under 7 of these headings in order to

⁴ The involvement of universities is dealt with in more detail in Chapter 2.

Table 4.1

QUESTIONNAIRE : AUDITING COURSE OBJECTIVES

	MEAN SCORES		TAXONOMIC
	UNIS	PRACS	CLASS
1. AUDITING - BACKGROUND (Including: History: Development: Structure of the Profession: etc.)			
1(a) Converse and write intelligently on the history, development and professional structure of auditing.	4.6	4.5	SYNTH
1(b) Explain aspects of the present state of auditing with reference to its historical background.	4.3	4.6	COMP
1(c) Recall facts and events about auditing referred to in lectures or reading assignments.	3.9	4.7	KNOW
1(d) Express a personal opinion as to what is considered positive or negative regarding these background topics.	4.6	6.0	EVAL
2. ETHICS & RULES (Including: SAICA statements on professional conduct, (3.001, 3.101, 3.102); Disciplinary rules; Rules of professional conduct; Confidentiality; etc)			
2(a) (Given a hypothetical situation) criticise the ethical behaviour of a practising accountant.	8.9	5.9	APPLY
2(b) Recall pronouncements and rules.	6.7	6.0	KNOW
2(c) Demonstrate an ability to critically evaluate the system of ethical pronouncements and rules.	6.2	6.8	EVAL
2(d) Explain the concept of ethics and the reason for any pronouncement or rule.	7.1	7.4	COMP
3. ACCOUNTING SYSTEMS & INTERNAL CONTROLS (Including: Principles and procedures of sound systems for any business entity.)			
3(a) Recall the principles applicable to any system of accounting and controls.	7.1	8.0	KNOW
3(b) (Given basic specifications) design a sound system of accounting and controls.	9.4	8.8	SYNTH
3(c) (Given a systems description) recommend improvements to the system.	9.7	9.1	ANAL
4. AUDIT PROCESS - PLANNING			
4(a) (Given hypothetical details of a client company) plan an audit.	8.7	8.7	SYNTH
4(b) Cite the reasons for audit planning.	8.2	7.4	KNOW
4(c) (Given the actions of an auditor) evaluate the audit planning carried out.	8.0	8.2	ANAL
5. AUDIT PROCESS - SYSTEMS EVALUATION (Including: The principles and procedures involved in the auditor's evaluation of accounting and control systems, namely, enquiry, review, recording, evaluation and compliance testing.)			
5(a) Describe how an auditor would evaluate any system.	8.5	7.8	KNOW
5(b) (Given a systems description) identify strengths and weaknesses in the system.	9.4	9.3	ANAL
5(c) (Given strengths and weaknesses in a system) design appropriate compliance tests.	9.3	8.7	APPLY

Table 4.1

QUESTIONNAIRE : AUDITING COURSE OBJECTIVES

		<u>MEAN SCORES</u>		<u>TAXONOMIC</u>
		<u>UNIS</u>	<u>PRACS</u>	<u>CLASS</u>
6.	AUDIT PROCESS - SUBSTANTIVE TESTING (Including: Testing of transactions and balances or vouching and verification, and analytical review.)			
6(a)	(Given a description of audit tests carried out) decide whether GAAS has been complied with.	8.5	8.0	EVAL
6(b)	Recall the general principles of audit testing.	7.2	7.6	KNOW
6(c)	(Given details of a client company) design appropriate audit tests.	9.3	8.9	APPLY
7.	AUDIT PROCESS - REPORTING			
7(a)	Draft an audit report from memory.	5.4	3.7	KNOW
7(b)	(Given relevant information on audit conclusions) decide what type of audit opinion to express, if any, and to draft a suitable report.	9.3	8.5	EVAL
7(c)	Recall the guidelines (Stmts 3.301 & 3.302) for issuing a qualified audit report.	7.4	6.9	KNOW
8.	LEGAL ASPECTS (Including: Relevant sections of the Companies Act and the Public Accountants' and Auditors' Act)			
8(a)	Recall sections of statutes included in the course.	5.6	5.6	KNOW
8(b)	Solve hypothetical legal problems with reference to the relevant statutes.	8.7	7.2	APPLY
8(c)	Explain the principles or logic of important sections of statute.	6.6	7.7	COMP
9.	COMPUTER AUDITING			
9(a)	Identify control strengths and weaknesses in a given computerised accounting system.	9.1	8.9	ANAL
9(b)	Recall the principles applicable to any computerised system of accounting and control.	7.1	7.5	KNOW
9(c)	(Given basic specifications) design a sound computerised system of accounting and control.	6.9	7.5	SYNTH
9(d)	(Given details of a client company) design appropriate audit tests; including computer assisted techniques, if necessary.	8.5	8.2	APPLY
9(e)	Recall the general principles of computer auditing.	6.7	7.5	KNOW
10.	SPECIALISED TOPICS (Such as: Statistical sampling; Quality control; Post balance sheet events; Materiality; Going concern; Internal auditing; Unlawful acts; Investigations; Prospectuses; Mergers & acquisitions; Reliance on other auditors; Prima facie insolvency; Risk; etc.)			
10(a)	Explain the principles underlying these topics.	7.6	7.3	COMP
10(b)	Apply principles and procedures in solving typical auditing problems on these topics.	8.5	7.8	APPLY
10(c)	Apply these principles and procedures in solving unique (new to the student) auditing problems on these topics.	8.0	7.2	ANAL

further clarify the topic. Included under each of these headings were between 3 and 5 of the 34 objectives.

The comparison of stated and inherent course objectives required some basis for labelling or classifying objectives. Bloom's taxonomy was selected for this purpose (Bloom 1956). (An extensive discussion of Bloom's taxonomy is the subject of Chapter 3.) It was, therefore, necessary to frame the course objectives used in the questionnaire in terms of an appropriate taxonomic classification. The process of formulating appropriate objectives under each topic heading and basing each of these on one of Bloom's taxonomic classifications was carried out simultaneously. Bloom's six taxonomic classifications (knowledge, comprehension, application, analysis, synthesis and evaluation), were used as a checklist for appropriate objectives under each topic. More specifically, the most suitable course objective (if any), would have been sought for each of the six classifications, for each of the ten topics. For the purpose of comprehensiveness and conciseness it was considered necessary for each topic heading to include at least three but not more than five objectives. Thus, where there were judged to be too few or too many objectives, additions or deletions were made accordingly. Consistency was aimed at in terms of stating each objective in measurable terms. For example, an action verb, such as, 'demonstrate',

'criticize', 'recall', etc., was incorporated in each objective.

Use of words that would clearly link an objective with its taxonomic type were, as far as possible, avoided. For example, words such as 'judge' or 'assess' rather than 'evaluate' were preferred in framing objectives of the Evaluation class. This was considered necessary in order to avoid the possibility of respondent bias through, for example, preferring the apparently 'higher' levels of Bloom's taxonomy.

The questionnaire was tested for logic and understandability by two academics and two practitioners. No fundamental changes were recommended although a number of semantic problems were rectified as a result. None of the testers were aware of the taxonomic character of the objectives. The resulting objectives and their taxonomic classifications are detailed in Table 4.1.

Subsequently, three academics, all with experience of teaching university auditing courses, were asked to classify the objectives in terms of Bloom's taxonomy. Table 4.2 details the results of this exercise.

Table 4.2

TESTING OF TAXONOMIC CLASSIFICATION OF OBJECTIVES USED IN QUESTIONNAIRE

(Differences arising between questionnaire and tester)

	OBJECTIVE	CLASSIFICATION PER ---TESTER---			
		Q'NAIRE	<u>1</u>	<u>2</u>	<u>3</u>
2d	Explain the concept of ethics and the reasons for any pronouncement or rule.	C			A
3b	(Given basic specifications) design a sound system of accounting and control.	S		A	
3c	(Given a systems description) recommend improvements to the system.	N	A		
4a	(Given hypothetical details of a client company) plan an audit.	S			A
5b	(Given a systems description) identify strengths and weaknesses in the system.	N	A		
6a	(Given a description of audit tests carried out) decide whether GAAS has been complied with.	E			N
9a	Identify control strengths and weaknesses in a given computerised accounting system.	N	A		

Legend:

K=knowledge

C=comprehension

A=application

N=analysis

S=synthesis

E=evaluation

No amendments to the questionnaire classifications as a result of these tests were considered necessary. The reasons for this were, firstly, that there was no consensus among testers (i.e. agreement between two or more) as to any of the alternative classifications suggested. Secondly, all differences between questionnaire and tester classifications are supported by argument favouring the former.

In the case of tester 1, the three differences all related to a re-classification of analysis as application. For each of these objectives a given systems description (i.e. accounting systems and internal controls) had to be assumed. If such systems descriptions were communicated in a clearly articulated, convenient and simple manner, then application might be the most appropriate classification. However, such communications are unlikely to occur, even in first auditing course examinations. To understand a system, particularly from a narrative description, requires the analysis of the system (as described), into its component parts. This process is supported by the fact that in practice, systems (or their controls) are recorded by means of flow charts or internal control questionnaires.

The accounting procedures and internal controls of a typical sales system would, for example, be broken down into a

number of transaction phases.⁵ In addition, an underlying principle of internal control, division of duties, could only be ascertained by relating people to the procedures involved so that no person is assigned two or more incompatible functions. This cannot be done without analysis of the systems description unless such description is clearly articulated, convenient and simple. Thus analysis is a more appropriate classification for the nature of the questions typical of (particularly final) auditing courses at South African universities.

The differences on objectives 3b (tester 2) and 4a (tester 3), both suggest application rather than synthesis. The arguments against these suggested re-classifications are, in the first instance, similar to those pertaining to tester 1 above. Application might only be appropriate where the system of accounting and control or the audit plan required were so straightforward as to require no more than the selection of suitable principles or procedures for a solution. Such simplicity is unlikely to occur in an auditing course (particularly not a final year auditing course). Both of these objectives, (i.e. designing a system and planning an audit), relate to ".... working with pieces, parts, elements, etc., and arranging and combining them to constitute a structure or pattern not clearly there before"

⁵ Such as: Ordering, Credit Control, Despatch, Invoicing and Recording.

(Bloom 1956, at p.192). Synthesis is, therefore, the highest taxonomic level appropriate to these objectives.

Tester 3 suggested that objective 2d should have been reclassified as application rather than comprehension. This suggestion does, however, presuppose that students would be making use of "..... abstractions in particular situations" (Bloom 1956, at p.191). It is submitted that expecting students to 'explain the concept of ethics and the reasons for any pronouncement or rule' is likely to be preceded by explanation through teaching in some form (e.g. lectures, readings or tutorials). The possibility of there being little or no difference between what is taught and what is examined, (and the objective consequently falling into the knowledge classification), was judged less typical of auditing examination questions than those requiring 'understanding' (rather than 'recall'). Comprehension is achieved through interpretation (e.g. the ability to grasp the thought of the work as a whole at any desired level of generality), or extrapolation (e.g. the ability to deal with conclusions of a work in terms of the immediate inference made from the explicit statements). This is considered to be a more appropriate classification for the objective of explaining the concept of..... and reasons for ethical pronouncements than application, as there are not set basic

explanations or reasons that can be applied in achieving this objective.

Objective 6a, classified as evaluation per the questionnaire, was re-classified as analysis by tester 3. Examination questions related to this objective could range from application to analysis to evaluation, depending on the nature of the question and the prior learning experience of the student. However, because Generally Accepted Auditing Standards (GAAS) are general statements of auditing principles, their application to specific audit situations is often a matter of judgment.

"Auditing standards differ from auditing procedures in that 'procedures' relate to acts to be performed, whereas 'standards' deal with measures of the quality of the performance"

"Auditing standards concern themselves with the auditor's professional qualities including the judgment exercised by him"

(South African Institute of Chartered Accountants, statement 3.001, para .12).

Although the above pronouncement is no longer in issue in its present form its logical consistency remains unchanged. The practical application of auditing standards is a matter of opinion which requires sound professional judgment. Evaluation is the 'highest' of the likely classifications and also considered to be the most appropriate.

2.2 Populations and Samples

Universities

During 1983 there were 18 South African universities teaching auditing courses which ultimately contributed towards a Certificate in the Theory of Accountancy (CTA) or its equivalent. Passing the CTA examinations entitles students to sit the Qualifying Examination (QE) of the PAAB. The designation Chartered Accountant (South Africa) (CA(SA)) cannot be used without, inter alia, having passed the QE. Auditing generally constitutes between a quarter and one third of the QE. The 18 universities are characterized by four different groupings, namely, English or Afrikaans (according to the predominant language characteristic); University of South Africa (as the only 'correspondence' or 'distance' university) and the so-called 'Tribal' or 'black' universities.

In view of the small population to be tested, all 18 universities were surveyed.

Auditing Practitioners

The national register of all qualified and practicing Chartered Accountants in South African (published by the

SAICA, March 1983) was used as a record of auditing practitioners in South Africa at the time. The section listing all registered CA's or firms of CA's was used as the population

All firms with six or more partners were included in the sample. This amounted to 91 firms. A further 5 firms with less than 6 partners were chosen randomly from the balance. The rationale for choosing the larger auditing practices was based on the number of articled clerks a firm is likely to employ. Small practices could not employ many articled clerks due the quota system applied by the PAAB whereby a sufficient variety of audit assignments must first be available before the practice is deemed suitable for the training of articled clerks. This and other minor quota regulations tend to favour the larger audit practices in terms of the permitted number of articled clerks per partner. These practitioners are, therefore, likely to have little or no association with university auditing courses. By contrast, the large auditing firms, employing large numbers of articled clerks tend, as a result, to have a greater interest in university education. It is because of this tendency that smaller firms comprised only 5% of the sample.

For the very large national auditing practices, one questionnaire was addressed to the partner responsible for the firm's national training. In cases where these audit firms had offices in other cities or towns with more than 6 partners questionnaires were sent to a partner in each such centre. In other cases questionnaires would have been sent to each office of one of the larger firms where there were more than 6 partners. In cases where it was not known to whom to address the questionnaire, a partners name was chosen at random from the register.

2.3 Responses

Only one of the 18 Universities surveyed failed to reply in time to be included in the statistical analysis. This constituted a response rate of 94%. Furthermore, as this late-respondent was one of the 'Tribal' colleges (University of the North) and offered only one undergraduate course in auditing, its exclusion did not constitute a significant omission (as would University of Witwatersrand or UNISA).

From the 96 questionnaires sent to practitioners, initial responses totaled 42, with a further 10 responses received after a reminder was issued. Responses were received from all the 'larger' firms of audit practitioners in South

Africa. This represented a first-time response rate of 44% and a total response rate of 54%.

Responses from the 10 practitioners who only returned their questionnaires after being reminded to do so were tested to determine whether any significant differences existed between their responses and those of the 42 'first-time' respondents. Table 4.3 reflects the 10 largest t ratios arising from differences between these two groups.

The hypothesis being tested was that the differences between the mean scores of the two groups, first-time and follow-up respondents, represented a real difference and was not caused only by sampling error. Any t ratio greater than 1.67 (per Senter, 1969 at p.492) would suggest, at the 10% significance level, that the hypothesis is not reasonable and that there appears not to be any bias in the responses of follow-up respondents.

3. STATISTICAL ANALYSES

The statistical analysis of the data will result in the examination of the nature and characteristics of auditing course objectives. The (34) questions on auditing course

Table 4.3

NON-RESPONSE BIAS TEST

Survey questions reflecting the 10 largest t Ratios of differences between 'first-time' and 'follow up' respondents

Q'NO	MEAN DIFF	STANDARD DEVIATIONS		t RATIO
		ORIGINALS (N=42)	FOLLOW UPS (N=10)	
7A	1.08	2.35	1.75	1.62
2A	1.32	2.46	2.49	1.51
6A	.62	2.06	1.08	1.33
9A	.51	1.30	1.06	1.32
2D	.64	1.78	1.60	1.11
4C	.51	1.79	1.17	1.09
4A	.46	1.86	0.99	1.07
1B	.84	2.15	2.33	1.04
6B	.54	2.20	2.00	0.75
3C	.27	1.10	1.10	0.69

objectives will be investigated for the two respondent groups, universities (Unis) and auditing practitioners (Pracs), within three groupings:

- 1) individually as 34 separate objectives,
- 2) by the six taxonomic groups of Bloom's taxonomy and,
- 3) grouped by the ten questionnaire topic headings.

The nature and characteristics of the objectives as stated and preferred by each respondent group respectively, as well as the inter-relationship between these two groups will be explored. The main bases of measurement to be used are mean scores and (standardised) Z-scores.

3.1 Statistical Packages

Statistical analysis was carried out using a computer with the aid of two different software packages. The main analyses were carried out on a Sperry-Univac mainframe computer using the University of California's BMDP Software statistical packages (Dixon 1981). Secondly, use was made of an electronic spreadsheet (Lotus 1-2-3) on a micro computer to further review data relationships.⁶ The ease of use and graph facilities of Lotus 1-2-3 provided clearer insights into some of the statistical relationships already established.

⁶ Lotus Development Corporation, Release 1A, 1983.

3.2 Testing Data

The data originated from 52 questionnaires returned by auditing practitioners and a further 17 from universities. Information on respondents was numerically coded as follows:

- (a) Sequence number to identify each respondent.
- (b) Identity of firm in the case of auditing practitioners. (In some cases respondents were partners in the same audit firm, but in different cities or towns.)
- (c) Age group of respondent (in the case of practitioners only).
- (d) Size of respondents' audit firm measured in total staff size.
- (e) In the case of practitioners, whether the response was original or the result of follow-up procedures to prompt reply.
- (f) In the case of universities, its type; i.e. 'English', 'Afrikaans', 'Tribal' or 'UNISA'.

The total input therefore consisted of 47 variables made up as follows: 8 respondents' detail variables (but only 2 used

in the case of universities); 5 rankings on course 'aims'; and 34 question scores on educational objectives.

Data was checked for completeness, accuracy and reasonableness in full, primarily by manual means, due to the relatively small amount of data involved. Use was made of BMDP facilities to further check data such as establishing that character fields did not contain numeric data and vice versa.

3.3 Taxonomic Groups

Bloom's taxonomy was used to classify educational objectives. The taxonomic character incorporated into the design of the survey questions provided a taxonomic profile of universities' auditing course objectives. The taxonomic view of responses was particularly important because of its use as the basis for the ultimate comparison of stated and inherent objectives.

The 34 objectives, their taxonomic character and the mean scores for universities and practitioners are detailed in Table 4.1 for reference purposes.

The mean scores and standard deviations on the taxonomic groupings, for universities and practitioners, are set out in Table 4.4 and a comparison of universities' and practitioners' mean and Z-scores on each taxonomic class graphically illustrated in Figures 4.1a and 4.1b.

It is noticeable that the mean scores of these two groups appear to be paired. Although there is some inversion between the mean scores of universities and practitioners, Application is the only taxonomic class where the mean difference is significant. Application and Analysis type-objectives are clearly established as the most representative and preferred objectives respectively. In a similar fashion, the (lower level) Knowledge and Comprehension type-objectives are firmly established as the least favoured objectives by both groups.

The hypothesis that the views of university and practitioners respondents on taxonomic emphasis differ is reasonable only in the case of Application, where it is concluded with 99% confidence that there is a genuine difference, not due to sampling error. (Refer Table 4.5 and Senter, 1969 at p.492.)

The cause of this difference in views on Application class objectives may be less real than it appears when the six

Table 4.4

**MEAN SCORES AND STANDARD DEVIATIONS
ON TAXONOMIC GROUPS FOR UNIVERSITIES AND PRACTITIONERS**

<u>TAXO CLASS</u>	<u>MEAN SCORES</u>		<u>STD DEVIATIONS</u>	
	<u>Unis</u>	<u>Pracs</u>	<u>Unis</u>	<u>Pracs</u>
KNOWLEDGE	6.7	6.6	1.7	1.6
COMPREHENSION	6.4	6.7	1.7	1.4
APPLICATION	8.9	7.8	0.8	1.2
ANALYSIS	8.8	8.5	0.8	1.1
SYNTHESIS	7.4	7.4	1.1	1.2
EVALUATION	7.2	7.3	1.4	1.3

FIGURE 4.1A

COURSE OBJECTIVES

UNIVERSITIES and PRACTITIONERS

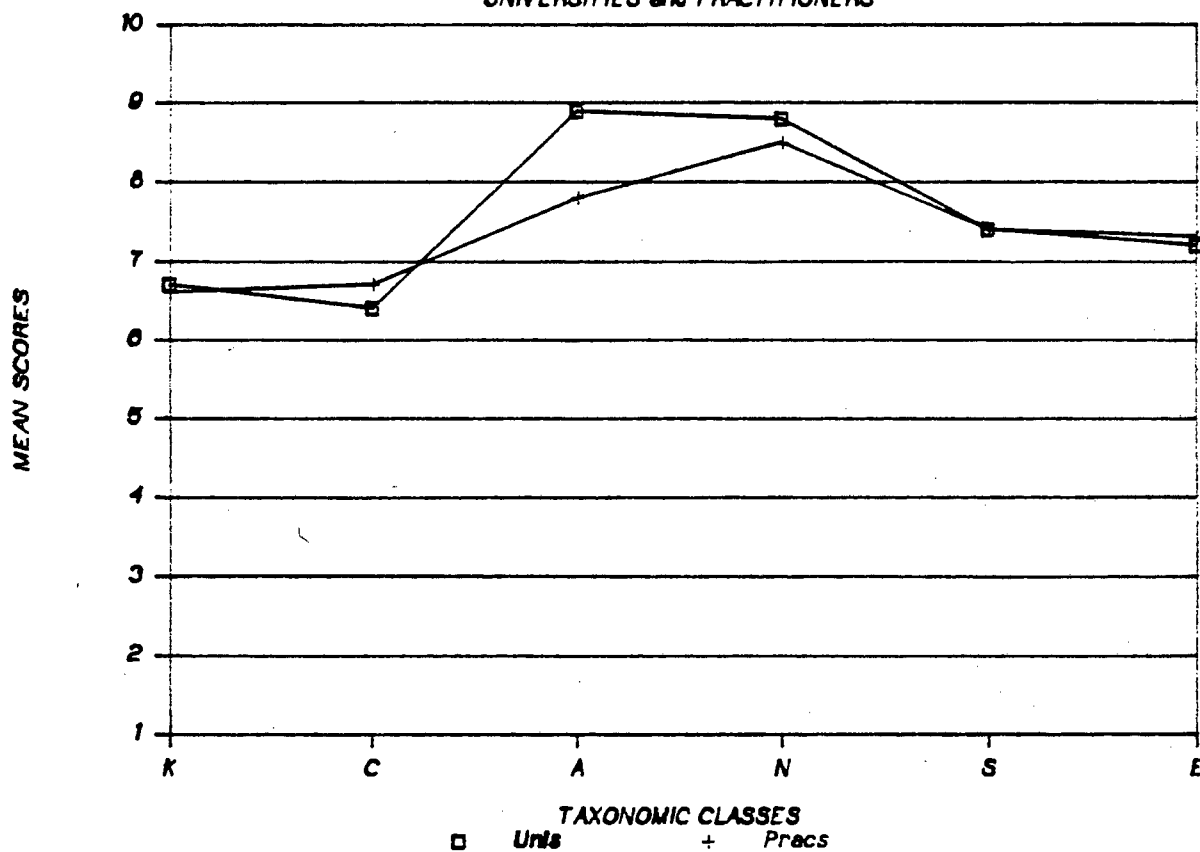
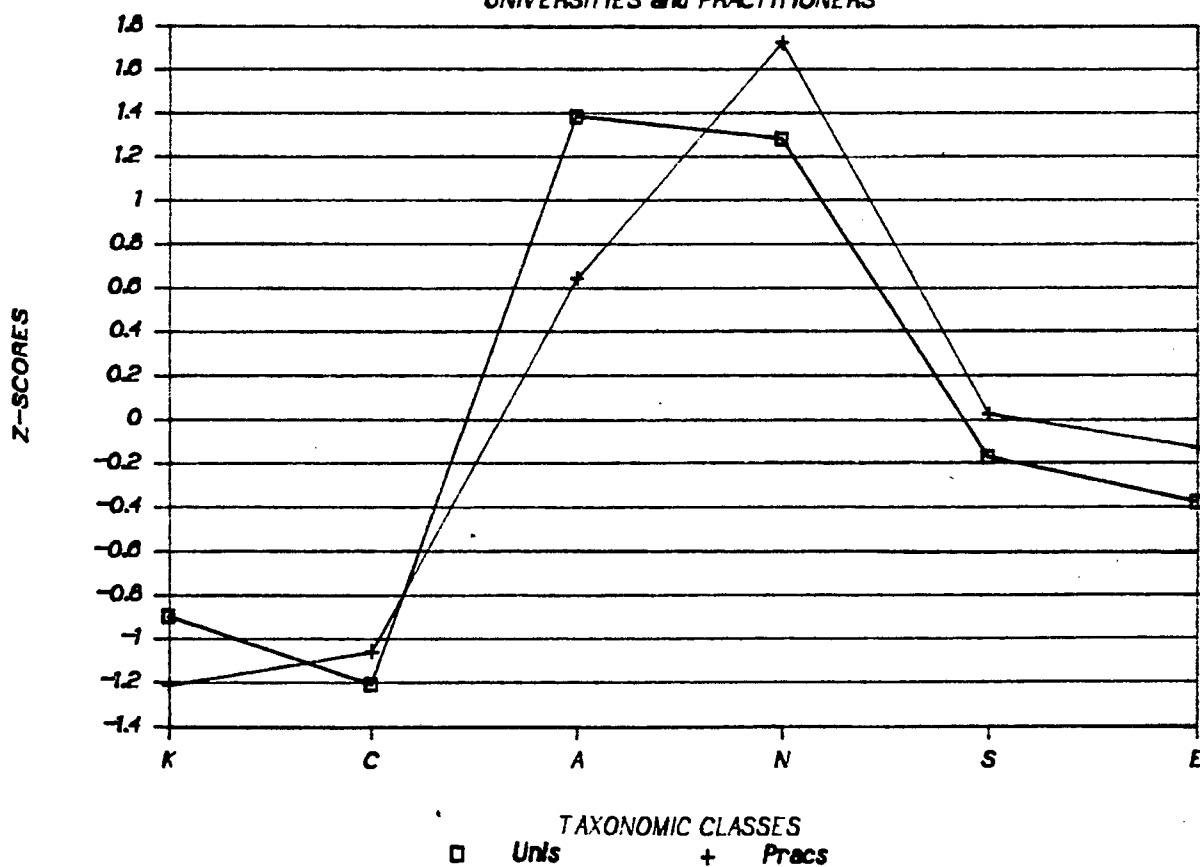


FIGURE 4.1B

COURSE OBJECTIVES

UNIVERSITIES and PRACTITIONERS



individual objectives making up these mean scores are considered. Table 4.6 illustrates the mean score differences between universities and practitioners on Application class objectives.

The differences between the views of the universities and practitioners arising from objectives 2a and 8b are significant and could not reasonably be attributed to sampling error.⁷ These two objectives account for 69% of the total mean differences and, of the six, are the only significant differences.

While individual objectives are considered under 3.5 below, it is appropriate to note at this point, the potentially extraneous influence on practitioners of the wording used for objective 2a; "(Given a hypothetical situation) criticize the ethical behaviour of a practicing accountant." In the absence of an appropriate test to reveal the psychological influences, it can only be speculated that the wording of this objective possibly evoked a sense of uneasiness among some practitioner respondents. Almost half of the total mean difference and the largest t ratio was attributable to this objective.

⁷ Refer Senter 1969, at p.492. Any t ratio greater than 1.67 would indicate a 90% probability of the difference being real and not due to sampling error.

Table 4.5

**TEST FOR SIGNIFICANCE OF MEAN DIFFERENCES BETWEEN UNIVERSITY
AND PRACTITIONER RESPONDENTS SUMMARIZED BY TAXONOMIC CLASS**

<u>TAXO CLASS</u>	<u>MEAN SCORES</u>		<u>MEAN DIFF</u>	<u>STD DEVIATIONS</u>		<u>t RATIO</u>
	<u>Unis</u>	<u>Pracs</u>		<u>Unis</u> n=17	<u>Pracs</u> n=52	
KNOWLEDGE	6.7	6.6	0.1	1.7	1.6	0.214
COMPREHENSION	6.4	6.7	-0.3	1.7	1.4	0.658
APPLICATION	8.9	7.8	1.1	0.8	1.2	4.282
ANALYSIS	8.8	8.5	0.3	0.8	1.1	1.215
SYNTHESIS	7.4	7.4	0.0	1.1	1.2	0.000
EVALUATION	7.2	7.3	-0.1	1.4	1.3	0.260

Table 4.6

ANALYSIS OF t RATIO ON APPLICATION CLASS OBJECTIVES

<u>QUESTION NO.</u>	<u>MEAN SCORES</u>		<u>MEAN DIFF</u>	<u>STD DEVIATIONS</u>		<u>t RATIO</u>
	<u>Unis</u>	<u>Pracs</u>		<u>Unis</u> n=17	<u>Pracs</u> n=52	
2a	8.9	5.9	3.0	1.25	2.50	6.69
8b	8.7	7.2	1.5	2.06	2.22	2.45
10b	8.5	7.8	0.7	1.38	2.16	1.61
5c	9.3	8.7	0.6	1.21	1.76	1.58
6c	9.3	8.9	0.4	1.05	1.49	1.37
9d	8.5	8.2	0.3	1.46	1.75	0.56

3.4 Topic Groupings

A summary of mean scores for universities and practitioners grouped by topic is contained in Table 4.7 and graphically illustrated in Figure 4.2. Topics 3 and 5, both concerned with internal control, are the most highly scored by both respondent groups. Topic 1, auditing background, was the only topic with a distinctly low score.

3.5 Individual Objectives

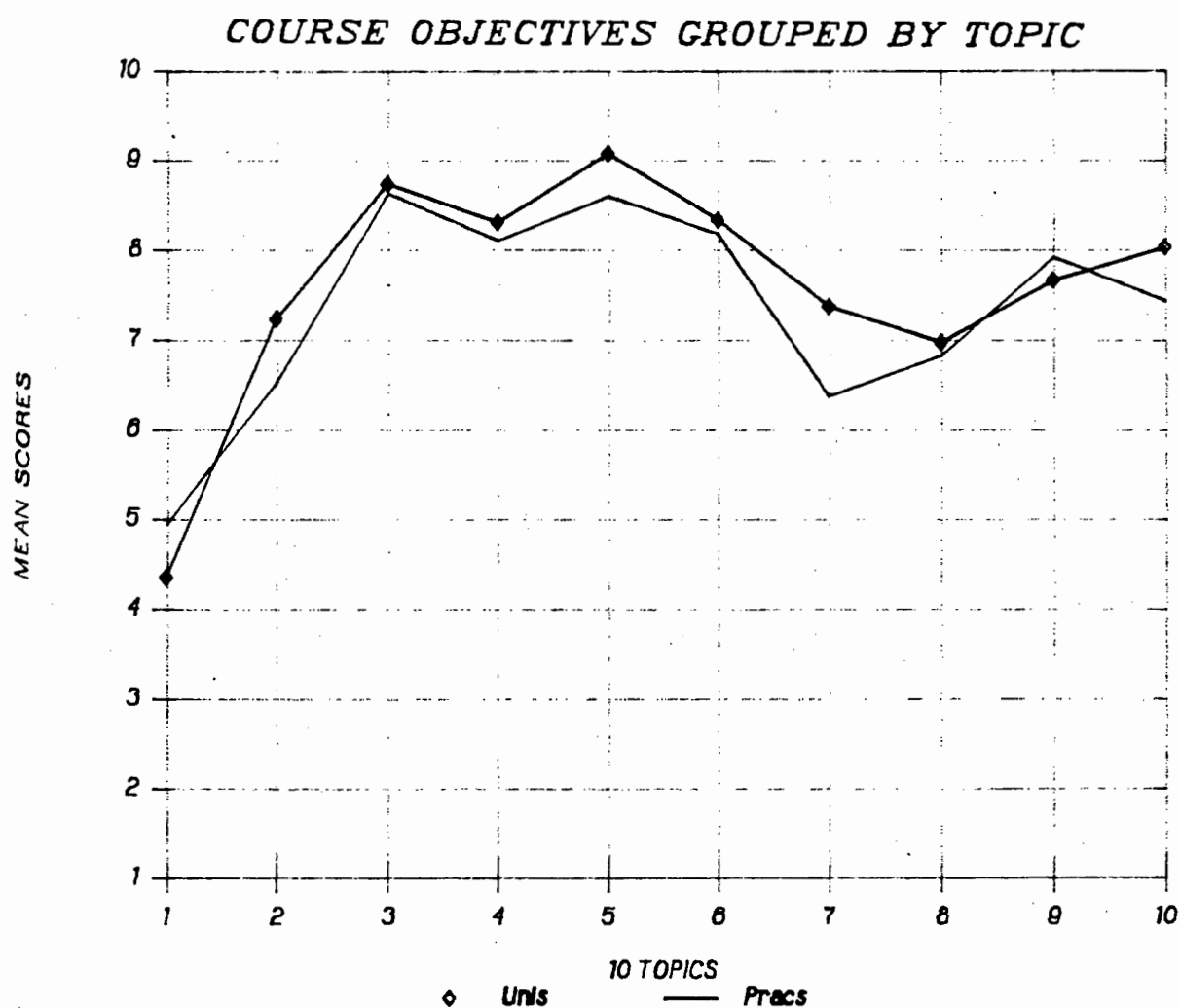
Internal control design, improvements and evaluation by the auditor (topics 3 and 5), were shown to be the most highly rated topics by both groups of respondents in Figure 4.2. The preference for these topics is supported by the fact that 8 out of the 10 objectives in Table 4.8 are either of the Application or Analysis taxonomic class (these are the two most highly rated taxonomic classifications, refer Table 4.4).

Because respondents were required to 'rate' each of the 34 educational objectives on the scale of 1 to 10, each could have had a different perception of the values represented by the scale of 1 to 10. It was, therefore, considered necessary to compute Z-scores so that respondents' scores

Table 4.7MEAN SCORES SUMMARIZED BY TOPIC

TOPIC	Universities		Practitioners		t
	Mean	Std Dev	Mean	Std Dev	Ratio
1 Auditing background	4.35	0.29	4.95	0.61	-1.779
2 Ethics	7.23	1.02	6.53	0.61	1.177
3 Systems & controls	8.73	1.16	8.63	0.46	0.138
4 Audit planning	8.30	0.29	8.10	0.54	0.567
5 Systems evaluation	9.07	0.40	8.60	0.62	1.106
6 Substantive testing	8.33	0.87	8.17	0.54	0.271
7 Reporting	7.37	1.59	6.37	2.00	0.678
8 Legal aspects	6.97	1.29	6.83	0.90	0.154
9 Computer auditing	7.66	0.96	7.92	0.56	-0.524
10 Specialized topics	8.03	0.37	7.43	0.26	2.298

FIGURE 4.2

**TOPIC LEGEND**

- 1 Auditing background
- 2 Ethics
- 3 Systems & controls
- 4 Audit planning
- 5 Systems evaluation
- 6 Substantive testing
- 7 Reporting
- 8 Legal aspects
- 9 Computer auditing
- 10 Specialized topics

Table 4.85 HIGHEST MEAN SCORES**Universities**

<u>Q'No</u>	<u>MEAN</u>	<u>TAXO CLASS</u>	<u>TOPIC</u>
3c	9.7	Analysis	Internal control recommendations
5b	9.4	Analysis	Internal control evaluation
3b	9.4	Synthesis	Internal control system design
5c	9.3	Application	Internal control system design
6c	9.3	Application	Design audit tests

Practitioners

<u>Q'No</u>	<u>MEAN</u>	<u>TAXO CLASS</u>	<u>TOPIC</u>
5b	9.3	Analysis	Internal control evaluation
3c	9.1	Analysis	Internal control recommendations
9a	8.9	Analysis	Computer control evaluation
6c	8.9	Application	Design audit tests
3b	8.8	Synthesis	Internal control system design

could be 'standardized' to facilitate more meaningful comparison.

Z-scores, were computed for data with respondents as 'cases' on the vertical axis and the 34 objectives (the first 13 variables were excluded) as 'variables' on the horizontal axis.⁸ The mean on which the Z-scores were calculated would therefore be of all cases' responses to one question at a time. The effect of this was the standardizing scores for one variable by all cases. This provided a standardized basis for identifying respondents (cases), who had rated a particular objective 'extremely' high or low in relation to other respondents. Thus, by examining extreme Z-scores across the objectives, the characteristics of individual respondents who had frequently responded with extremely high or low ratings in relation to the other respondents could be identified.

From these Z-scores all scores larger than 2 (+ or -) were extracted. Thus, the extreme Z-scores, (all negative in this instance), would indicate the individual respondents who had frequently responded 'extremely' low or high in relation to all other respondents'. Table 4.9 identifies 6 practitioner

⁸ Based on the formula: $Z_j = (X_j - X) / s$
where X_j is the individual rating, X is the mean of all ratings (calculated vertically), and s is the standard deviation.

and 2 university respondents with the highest frequency of extreme scores in this range.

The characteristics of practitioner respondents concerned did not show any noticeable trends to explain the high Z-score frequencies. Most were from the 'larger' South African audit firms. The ages of respondents were between 25 and 45 years, and they were situated in a number of different cities.

Of the extreme practitioner Z-scores listed, 48% were classified as knowledge-type objectives. No other taxonomic classification featured as prominently in the frequency counts listed. This analysis tends to suggest that three of the practitioner-respondents, who were among those frequently rating objectives lower than all other respondents, clearly focused on knowledge-type objectives as some of the least desirable types of educational objectives for university auditing courses.

For universities, the 2 respondents listed showed no distinct taxonomic profile to their ratings. The nature of the respondents was also rather mixed, one being a 'Tribal' and the other an 'Afrikaans' University.

Table 4.9

RESPONDENTS WITH HIGH FREQUENCIES OF EXTREME* Z-SCORES

Practitioners:

<u>Respon-</u> <u>dent No</u>	<u>Freq-</u> <u>uency</u>	<u>Respond-</u> <u>ent age</u>	<u>Firm</u> <u>size</u>	<u>Loca-</u> <u>tion</u>	<u>Taxonomic class</u> **					
					<u>K</u>	<u>C</u>	<u>A</u>	<u>N</u>	<u>S</u>	<u>E</u>
14	13	36-45	51-100	CT	8	-	2	2	-	1
50	10	25-35	51-100	CT	8	1	1	-	-	-
34	7	25-35	51-100	Dbn	-	-	4	1	1	1
6	6	25-35	100+	Jhb	-	-	2	3	1	-
7	5	25-35	100+	Jhb	1	-	-	2	1	1
19	5	25-35	100+	Jhb	5	-	-	-	-	-
	46				22	1	9	8	3	3

Universities:

<u>Respon-</u> <u>dent No</u>	<u>Freq-</u> <u>uency</u>	<u>University</u>		<u>Taxonomic class</u> **					
		<u>Name</u>	<u>Type</u>	<u>K</u>	<u>C</u>	<u>A</u>	<u>N</u>	<u>S</u>	<u>E</u>
16	5	Zululand	Tribal	-	1	2	1	-	1
7	3	Pretoria	Afrikaans	1	-	1	-	-	1
	8			1	1	3	1	-	2
Totals	54			23	2	12	9	3	5

* All extreme Z-scores represented in the above frequencies were negative numbers larger than 2.

**

Legend:

K=knowledge

C=comprehension

A=application

N=analysis

S=synthesis

E=evaluation

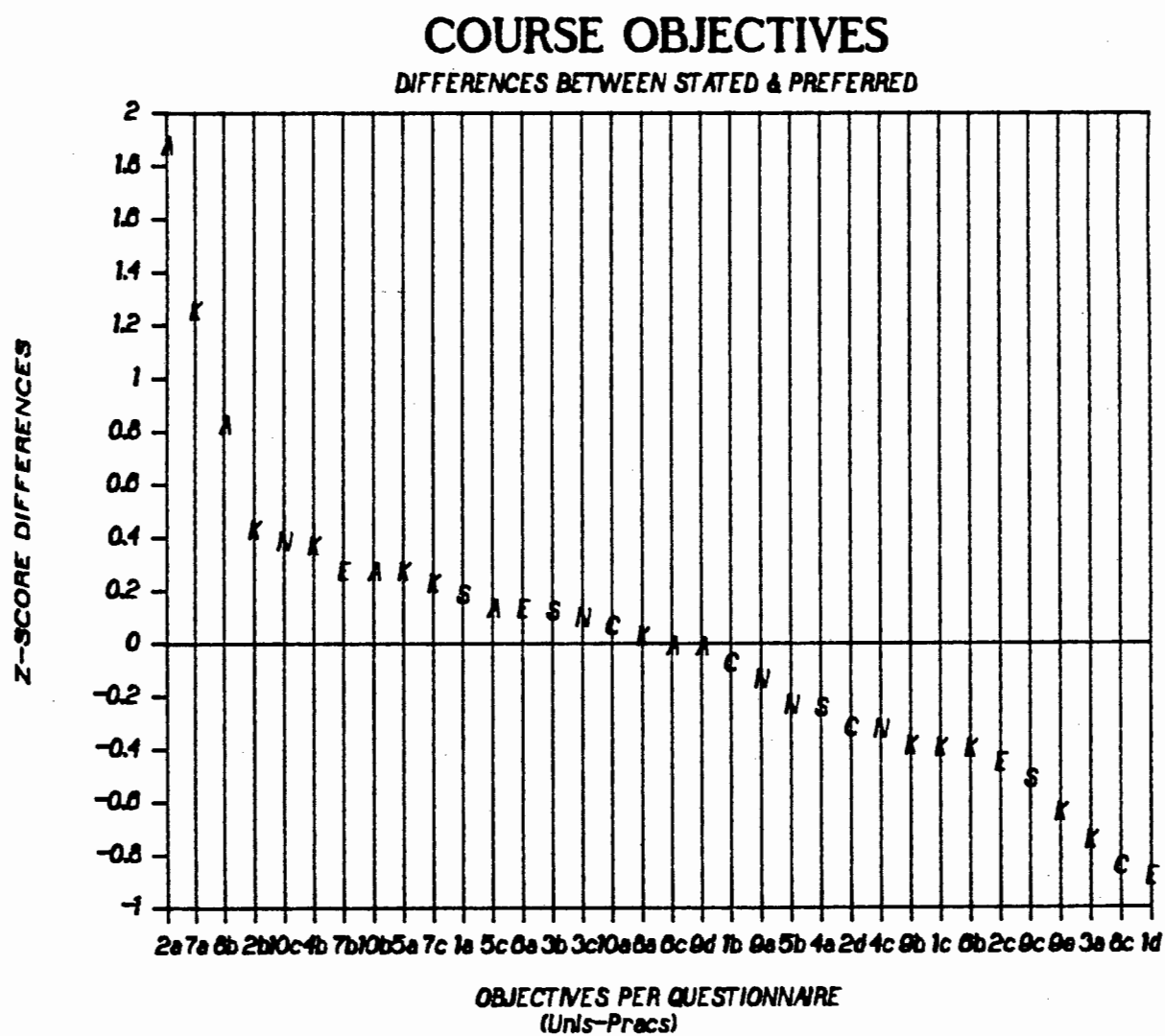
The apparently stronger tendency of practitioners, rather than universities, to apply low ratings to certain objective questions may be due to the fact that practitioners were being asked to rate according to what they considered 'desirable' educational objectives, while universities were being asked to indicate their 'stated' educational objectives. There would appear to be grounds for further investigation of a possible tendency by practitioners to rate 'knowledge' (or 'recall') type objectives extremely low in educational importance.

The differences between the responses of universities and practitioners using Z-scores for each of the 34 objectives is revealed by the graph in Figure 4.3.

From the graph, the most apparent differences are on objectives 2a, 7a, 8b, 1d and 8c. In fact, the difference in actual mean scores on objective 2a is significant at a 99% confidence level, and on objectives 1d, 7a and 8b, at 95% confidence level. None of the other differences are significant.

As previously suggested, the significantly lower response by practitioners to objective 2a, "(Given a hypothetical situation) criticise the ethical behaviour of a practising accountant" (mean scores; universities 8.9 and practitioners

FIGURE 4.3



5.8), could be due to the evocative wording of this objective. There is little evidence to suggest that either the topic or the taxonomic classification has invoked this extraordinarily negative response from practitioners.

Objective 7a, "Draft an audit report from memory", involved only degrees of low scores (means; universities 5.4 and practitioners 3.7, refer also Table 4.10). It seems possible that this could be an reflection of the uselessness of this ability in audit practice, whereas auditing students might often be required to produce an audit report from memory in the course of dealing with audit reporting problems. The extremely low score by practitioners is corroborated by the tendency to rate knowledge-type objectives extremely low, as reflected in Table 4.9.

Another difference arose on objective 1d. Topic 1, "Auditing Background", was clearly the most lowly scored of the 10 topics (refer Figure 4.2). When one considers that this topic is essentially 'academic' in nature, it is surprising that practitioners' scores were generally higher than universities'.

In order to obtain another perspective using Z-scores, data was transposed (inverted) so that the 34 objectives were set out vertically as 'cases' and respondents were set out

horizontally as 'variables'. The mean on which the Z-scores would be calculated would be of all objectives (cases), for one respondent (variable) in each instance. As the cases were now the 34 objectives, and the variables, each of the respondents, the Z-scores became more meaningful in the sense that they were now comparable across the objectives for each respondent. Extremely high or low responses to any particular objective by a respondent could thereby be identified. This effectively facilitated a comparison between respondents who may have perceived the original rating scale differently, and would indicate genuine extreme scores on an objective by any respondent.

An analysis of the actual Z-scores obtained from the inverted data are set out in Table 4.10

As the mean scores have already indicated, objective 7a ("Draft an audit report from memory") has attracted the lowest ratings, particularly from practitioners.⁹ While the auditor's report is significant in terms of what it represents in practice (ie. the results of a complex audit process) and what it implies (eg. that the conditions of section 300 of the Companies Act have been met), the majority of auditors' reports simply involve the reproduction of the standard wording of an unqualified audit

⁹ Mean scores: practitioners 3.7 and universities 5.4

Table 4.10

OBJECTIVES WITH HIGH FREQUENCIES OF (INVERTED) Z-SCORES*

<u>Q'No.</u>	<u>TAXONOMIC CLASSIFICATION</u>	<u>Z-SCORE*</u> <u>FREQUENCY</u>	<u>% OF TOTAL RESPONSES</u>	<u>MEAN</u>
Practitioners:				
7a	Knowledge	20	38	-1.60
1a	Synthesis	16	31	-1.26
1b	Comprehension	11	21	-1.22
1c	Knowledge	11	21	-1.15
1d	Evaluation	<u>4</u>	8	-0.59
		<u>62</u>		
Universities:				
1b	Comprehension	5	29	-1.27
1c	Knowledge	3	18	-1.63
1d	Evaluation	2	12	-1.20
1a	Synthesis	1	6	-1.21
7a	Knowledge	<u>1</u>	6	-0.88
		<u>12</u>		

* Only Z-scores larger than 2 are listed. All of these are negative.

report. The ability to reproduce such a report from memory, therefore, would rightly be considered a skill of particularly limited value.

In view of this, the exceptionally negative response of practitioners to this objective is understandable. For auditing students, however, the audit report, particularly in the non-standard or qualified form, is an important means of conveying the conclusions they have reached regarding the fair presentation of financial statements (and/or related issues). Because of this universities might be expected to rate this objective higher than practitioners although recall is less important than the judgemental process involved.

Question 1(a) attracted the second highest frequency of Z-scores of 2 or more (+ or -), in this case low (negative Z-score) responses. While the frequency of very low Z-scores from academics was small, the mean scores (practitioners 4.5 and universities 4.6) and Z-scores (means -1.26 and 1.21 respectively) indicate little difference between universities' stated, and practitioners' preferred educational objectives - they have both rated objective question 1(a) very low.

Another view of the data contained in Table 4.10 is that, apart from Topic 1, objective 7a was the only other to attract a strong negative response. It is, therefore, possible that the topic, rather than the taxonomic class of the objectives, exerted the greater influence on respondents in the case of Topic 1.

4 CONCLUSION

It should be noted that while Z-scores have enabled comparisons between individual respondents and objectives, establishing the degree of 'representativeness' of the educational objectives was based on actual rating scores (from 1 to 10). Mean scores on each educational objective for universities indicated the degree of 'representativeness'. Abnormally high or low ratings would have been diluted by the sample but scrutinized as a result of the study of Z-scores.

The results of the survey indicated that Application and Analysis class objectives were the most representative of universities' actual 'stated' objectives. Conversely, Knowledge and Comprehension class objectives were least representative. Furthermore, the objectives of Topic 1, Auditing Background, received a distinctly low rating.

Practitioners' views on preferred educational objectives differed little from universities' stated objectives. The only point of significant difference between the two groups was on Application class objectives. This was noticeably influenced by one question (on objective 7a) suspected of evoking a response from practitioners based on factors other than those underlying the responses to other objectives.

The results of the survey will be taken a step further when compared with inherent educational objectives in Chapter 5.

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*CHAPTER 5***INHERENT COURSE OBJECTIVES:
AN INFERENTIAL ANALYSIS OF
EXAMINATION QUESTIONS**

1. INTRODUCTION
2. METHODOLOGY
3. APPLYING BLOOM'S TAXONOMY
4. RESULTS
5. CONCLUSIONS

1. INTRODUCTION

Of particular importance in the relationship between the elements of an educational course¹ is the link between objectives and evaluation (examination) through the educational process (Maciver, 1974 at p.42). Whether course objectives are explicitly stated or implicit, such as in the educational process or from examination history, no educational course can be completely devoid of objectives. That evaluation should relate to course objectives is axiomatic. The very purpose of evaluation necessitates a particularly distinct relationship between these two elements. It is this 'objective-related' element of examination questions on which attention will be focused in this chapter.

The analysis of selected auditing course examination papers was carried out to determine, through inference, the inherent educational objectives of auditing courses. These objectives were analysed in terms of Bloom's taxonomy so as to provide a basis, (by means of a classification system), for subsequent comparison with the stated course objectives already identified.

1 Namely, Course content and Aims; Objectives; Educational Process; and Evaluation.

2. METHODOLOGY

An established method of carrying out inferential analyses of educational objectives inherent in course examinations is by means of a panel of judges (Seddon, 1978). For the purposes of this study a panel of 5 judges, all with experience of teaching auditing at South African universities, was selected.² Two of the five judges had previous working experience of Bloom's taxonomy. The remaining three judges studied the taxonomy for the purposes of applying it to this analysis. A sixth person, an educational technologist of the Teaching Methods Unit of the University of Cape Town, attended as an advisor on the use and interpretation of Bloom's taxonomy.³

The course examinations analysed comprised a set of examination papers for all auditing courses (eg I and II) from selected universities' 1983 year end examinations. Three sets of examination papers were randomly selected for analysis from among six universities with examination papers available in English.⁴ Afrikaans examination papers were

² Namely; Prof. J van Zyl Smit of the University of Stellenbosch, Messrs. G. Puttick, H. Rhoda, R. Young and the author, all involved in teaching auditing at the University of Cape Town.

³ Namely; Mr. G. Pastoll.

X⁴ The population comprised the universities of: Witwatersrand, South Africa, Natal (Durban), Natal (Pietermaritzburg), Rhodes and Cape Town. The sample comprised the universities of: Natal (Pietermaritzburg), Rhodes and Cape Town.

excluded because of the semantic difficulties of applying Bloom's taxonomy in Afrikaans.

Two meetings of the panel were scheduled one week apart. The purpose of these meetings was to discuss and record the judge's taxonomic classifications. Discussion was aimed at clarifying understanding of Bloom's taxonomy generally and, in instances of clear disagreement, to establish that the causes of these differences were clearly understood and acceptable to the panel. In order to achieve all this, panel members were supplied with the following:

- (a) An instruction memorandum. (Refer Appendix C)
- (b) A summary of Bloom's taxonomy. (Refer Appendix B)
- (c) A copy of each of the six examination papers (2 per university) to be classified. University identities were removed to avoid possible bias by the judges in this respect. (Refer Appendix D)
- (d) A master schedule (of question components from each examination paper and columns for the six taxonomic classes) on which to record their analyses. (Results summarised in Appendix C)

The judges were requested to analyse and classify the examination papers prior to the first meeting.

A question by question discussion of the judges' classifications initially evoked considerable discussion of

the problems of taxonomic analysis generally, as well as some of the specific problems in relation to the interpretation and classification of auditing questions. A master schedule of all the judges' classifications was compiled after the first meeting. From this master schedule question components which indicated significant disparity of opinion among judges were selected for further discussion at the second meeting. In some instances discussion revealed erroneous classifications by individual judges. These were re-classified by the judge concerned where there was general consensus on the error.

To convert the judges' classifications into workable 'scores', the following summarization was affected:

- (a) Each participant awarded 1 'point' to each of the 85 question components. This point would be awarded to one of the six taxonomic classifications, or apportioned among more than one. Thus each question component would attract a total of 5 points, (1 from each judge), attributed to one or more of the six taxonomic classifications. (Refer Appendix C)
- (b) Weighted scores were calculated for each of the 85 question components by multiplying the percentage points apportioned to each of the taxonomic classifications by the percentage

the question component represented in relation to the total marks for the examination paper concerned.

- (c) The weighted scores for each examination paper (per (b) above) were totaled by taxonomic classification so that the total percentage marks for the paper were spread among the six taxonomic classifications. The two papers for each of the three universities were then combined to provide the final taxonomic classifications. (Refer Table 5.1)
- (d) In addition, each question component was classified according to one of the 10 topic headings used in the survey questionnaire. This provided a topic profile of each university's auditing course examination papers. (Refer Table 5.2)

3. APPLYING BLOOM'S TAXONOMY

During the first meeting of the panel several issues relating to the application of Bloom's taxonomy to the classification of auditing examination questions (or components thereof) were discussed.

Table 5.2

TAXONOMIC PROFILES OF INHERENT OBJECTIVES

Analysis of the examination papers of Universities A, B & C

[illegible]

There was general consensus that two important assumptions had to be made with regard to each classification. The first concerned the student's previous educational experience. As Bloom himself acknowledges, a high level problem may be reduced to the level of recall if the student has previously been taught to answer such questions (Bloom et al, 1956 at p.51).

Counter to this was the argument that if a student answered an examination question successfully, it did not matter whether the answer had been recalled or deduced. It was the ability to answer that question that was important. This argument does not, of course, hold true where a specific purpose of an examination question is, for example, to test students' judgmental ability.

The second assumption related to the answers expected by examiners, and the manner in which marks were awarded. For example; in question 2.1 of University A (refer Appendix D), students were required to advise a client on the solutions to various legal problems. The general consensus of the panel was that this question required 'application' of the relevant statutes to the client's specific problems. Knowledge of the relevant statutes would, of course, be a pre-requisite to dealing with the problems. However, if it were possible for a student to earn the majority of the

available marks for simply identifying the relevant statutes without explaining how they could contribute to solving the problems, then clearly, the taxonomic character of that question would be 'knowledge' rather than 'application'.

The panel were asked to carefully consider the distinction between a question component containing two or more distinctly different levels of knowledge and one where a lower level of knowledge was an inherent part of an ultimately higher taxonomic requirement. The consensus was that in the former instances, questions should be afforded multiple classifications, and in the latter, the question should be classified at the highest taxonomic level it represented.

The obvious limitations of Bloom's taxonomy - its lack of specificity and the subjective judgment required in classification - were acknowledged.

Research into the reliability of judges' classifications of Bloom's taxonomy indicates mixed results.

"In appraising the results of their respective experiments, the various authors came to rather different conclusions about the reliability of the judge's assignments. Scannell and Stellwagen (1960) concluded that there is a "reasonable degree of accuracy" (p.13). Stoker and Kropp (1964) stated that their judges "can assign items to the appropriate categories with some accuracy" (p.40). Stanley and Bolton (1957) pointed to the

considerably better agreement in the case of ability as opposed to achievement items but concluded that "there seems to be enough agreement among graduate students independently classifying test items to warrant the regular analysis of teacher-made and standardized tests" (p.634). On the other hand, Fairbrother (1975) and Poole (1971, 1972) both emphasized the observed general lack of agreement." (Seddon, 1978 at p.306)

The reliability of judges' classifications of Bloom's taxonomy referred to by Seddon has been measured on the basis of the extent of 'perfect agreement' among them. An analysis of the extent of agreement among the 5 judges participating in this study is contained in Table 5.3 and graphically illustrated in Figure 5.1.

It is worth noting the trend in agreement among the five judges. The concentration of incidences of agreement among the knowledge, application and, to a lesser extent, evaluation classifications is not unexpected in view of the clear emphasis on these three classifications in examination papers. Table 5.1 reflects an inherent objective profile for these three classifications. The average for the three universities is: knowledge 24%; application 43%; and evaluation 17%. At the perfect agreement level (100% ie. all 5 judges making the same taxonomic classification), the knowledge classification is clearly prominent (accounting for 5 out of 6 or 83% of perfect agreements). However, a clear trend appears as the levels of agreement drop towards




Table 5.3

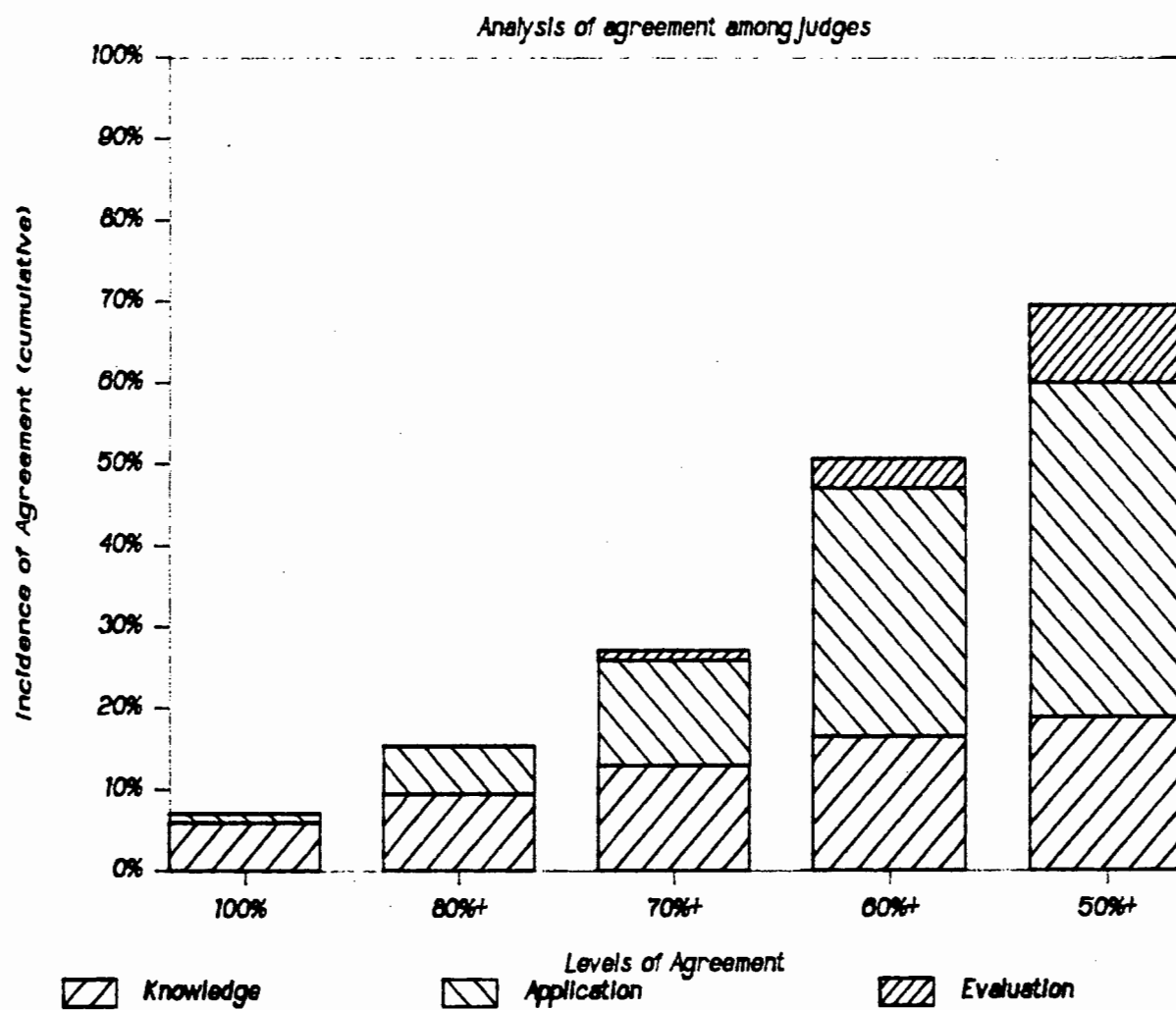
ANALYSIS OF AGREEMENT AMONG JUDGES ON CLASSIFICATION OF OBJECTIVES INHERENT IN AUDITING COURSE EXAMINATION PAPERS

Level of Agreement	Cumulative Totals		Taxonomic Classification					
	Items	Percentage	<u>K</u>	<u>C</u>	<u>A</u>	<u>N</u>	<u>S</u>	<u>E</u>
100%	6	7%	83%	-	17%	-	-	-
80%+	13	15%	62%	-	38%	-	-	-
70%+	23	28%	48%	-	48%	-	-	4%
60%+	43	51%	33%	-	60%	-	-	7%
50%+	59	71%	27%	-	59%	-	-	12%

Legend:

K = Knowledge
C = Comprehension
A = Application
N = Analysis
S = Synthesis
E = Evaluation

FIGURE 5.1



50%. Analysis emerges as the classification attracting the greatest degree of agreement among the judges, with evaluation also beginning to appear prominently. The knowledge classification consequently assumes a decreasing proportion of the incidences of agreement.

Although there were a number of incidences of agreement among the judges at the 40% level, there were none above the 50% level of agreement for the remaining three classifications (comprehension, analysis and synthesis).

It would appear that, with respect to the examination papers analysed, knowledge class questions were the most clearly identifiable (5 of the 6 incidences of perfect agreement involved knowledge classifications); followed by application and then evaluation.⁵ The identification of knowledge class questions, above the other five classifications, is supported by Poole's findings, ".... that the amount of agreement among judges in the placement of test items was small and that KL [Knowledge Level] items seem to be the most unambiguous when it comes to placement." (Poole, 1971 at p.383). By contrast, the data indicates that the judges experienced difficulty in agreeing on any of the remaining classifications (comprehension, analysis and synthesis).

⁵ For examples; refer Appendix C; University A, questions 5(5), 5(6), 5(7), 2.1, 2.4(a), 2.5(a), 2.7(1), 2.8(2); University B, questions 5(a), 5(b), 6(b), 8(b), 2.5, 2.7; University C, questions 3, 5(b), 2.2(2), 2.2(3).

The examination papers actually used in this study (refer Appendix D) clearly reflect the predominance of the situational problem-type question in auditing. As a consequence, the taxonomic nature of such questions are less distinct than objective test-type questions. Such lack of distinction tended to manifest itself in two ways.

Firstly, as multiple classifications contained within single questions. For instance; University A, question 1, part 3, reflects two distinct classifications - notwithstanding the policy of excluding 'lower-level' classifications contained within 'higher' ones - application and evaluation. Three of the five judges split their 'point' over these two classifications for this question. As many as 65% of the question components classified in this study caused one or more judges to apportion their point over more than one taxonomic classification.

Secondly, because of the multi-faceted tendency of the auditing questions analysed, the difficulty of choosing between two or more classifications increased the opportunities for disagreement among the judges.

Seddon (1978 at p.305) summarized the results of several other investigations into the classification of examination

or test items according to Bloom's taxonomy.⁶ This summary, together with the results of this study, inserted for comparison, are shown in Table 5.4.

As Seddon observes, the extent of perfect agreement generally decreases as the number of judges increases. However, the relatively low level of perfect agreement achieved by the judges in this study appears to be due to other factors.

The three studies most proximate to this one are, according to Table 5.4, one by Herron (1966) and two by Poole (1971 and 1972). These studies did, however, differ from this study in two significant respects.

Firstly, the examination papers analysed in the Herron and Poole studies comprised only objective (multiple-choice) test items. Such tests are by nature both more concise and precise than the situational problem-type questions classified in this study. The tendency towards multiple classifications within auditing questions mitigate against favourable comparison with objective test questions in terms of incidences of perfect agreement among judges.

⁶ Seddon (1978) *op cit*, at page 305.

Table 5.4

**SUMMARY OF THE RESULTS OF INVESTIGATIONS
INTO THE RELIABILITY OF JUDGES CLASSIFYING
TEST ITEMS ACCORDING TO BLOOM'S TAXONOMY**

	<u>Number of judges</u>	<u>Number of items</u>	<u>Subject matter</u>	<u>Percentages of perfect agreement</u>
Scannell & Stellwagen (1960)	2	?	Chemistry	90
Tyler (1966)	2	384	Geography	75
Cox (1965)	3	379	Natural Science	85
Stoker & Kropp (1964)	4 4	36 36	Chemistry Size re- lations	31 31
Herron (1966)	5	83	Chemistry	40
<i>THIS STUDY (1984)</i>	5	85	<i>Auditing</i>	7
Poole (1971)	6	32	Social	16
Poole (1972)	7	44	studies	14
Fairbrother (1975)	22	40	Physics	7
	22	40	Physics	0

Secondly, in the studies by Herron and Poole, the judges were required to select one of the six taxonomic classifications in respect of each question. For the purposes of this study, due to the multi-faceted tendency of the auditing examination papers analysed, judges were permitted to select more than one taxonomic classification in respect of each question. X

Thus, while Seddon's summary does provide a benchmark, both of the abovementioned factors mitigate against a higher level of perfect agreement among the judges of this study in relation to those of Herron's and Poole's studies.

4. RESULTS

The results of the inferential analysis of the three universities' examination papers were arrived at as follows:

- (a) The scores of the 5 judges were aggregated for each question component analysed so that each reflected 5 points attributed to one or more of the 6 taxonomic classifications.
- (b) The weighted score for each taxonomic classification was calculated in respect of each examination paper as follows: ✓

$$WS_j = \sum_{i=1}^n P_i T_{ij}$$

?

where:

WS_j = weighted score for taxonomic classification j ($j = 1$ to 6 for Knowledge through to Evaluation).

T_{ij} = taxonomic classification of P_i .

P_i = percentage of the examination paper represented by question i .

This was repeated for each of the 6 taxonomic classifications to produce a taxonomic profile for each examination paper.

- (c) By combining each of the 6 taxonomic classifications for the set of two examination papers of each university, the taxonomic character of the inherent educational objectives for the auditing courses of each university were established.
- (d) In addition to taxonomic classifications each question component was labeled in terms of one of the 10 topic headings used in the questionnaire. This facilitated a topic profile of each university's examination papers. (Refer Table 5.2)

The final results of this inferential analysis are shown in Table 5.5⁷ and graphically illustrated in Figure 5.2. These results reveal a noticeable similarity in the taxonomic emphasis in the examination papers of the three universities sampled. Application and Knowledge are clearly the most heavily emphasized classifications. In a relational sense, university B emphasized knowledge at the expense of application and university C has emphasized application and comprehension at the expense of knowledge and evaluation. It should be noted that evaluation shows the third strongest emphasis in each case.

5. CONCLUSION

The process of classifying auditing examination papers using a panel of judges, while a tried and tested method, proved difficult due to the nature of auditing examination questions. Although the level of agreement did not, for reasons already discussed, rate well against other such studies, the results did provide the required taxonomic profile of inherent course objectives. From the experience of the two meetings of the panel of judges, indications were that the ability of the panel to interpret and classify

⁷ This is a summarized version of Table 5.1.

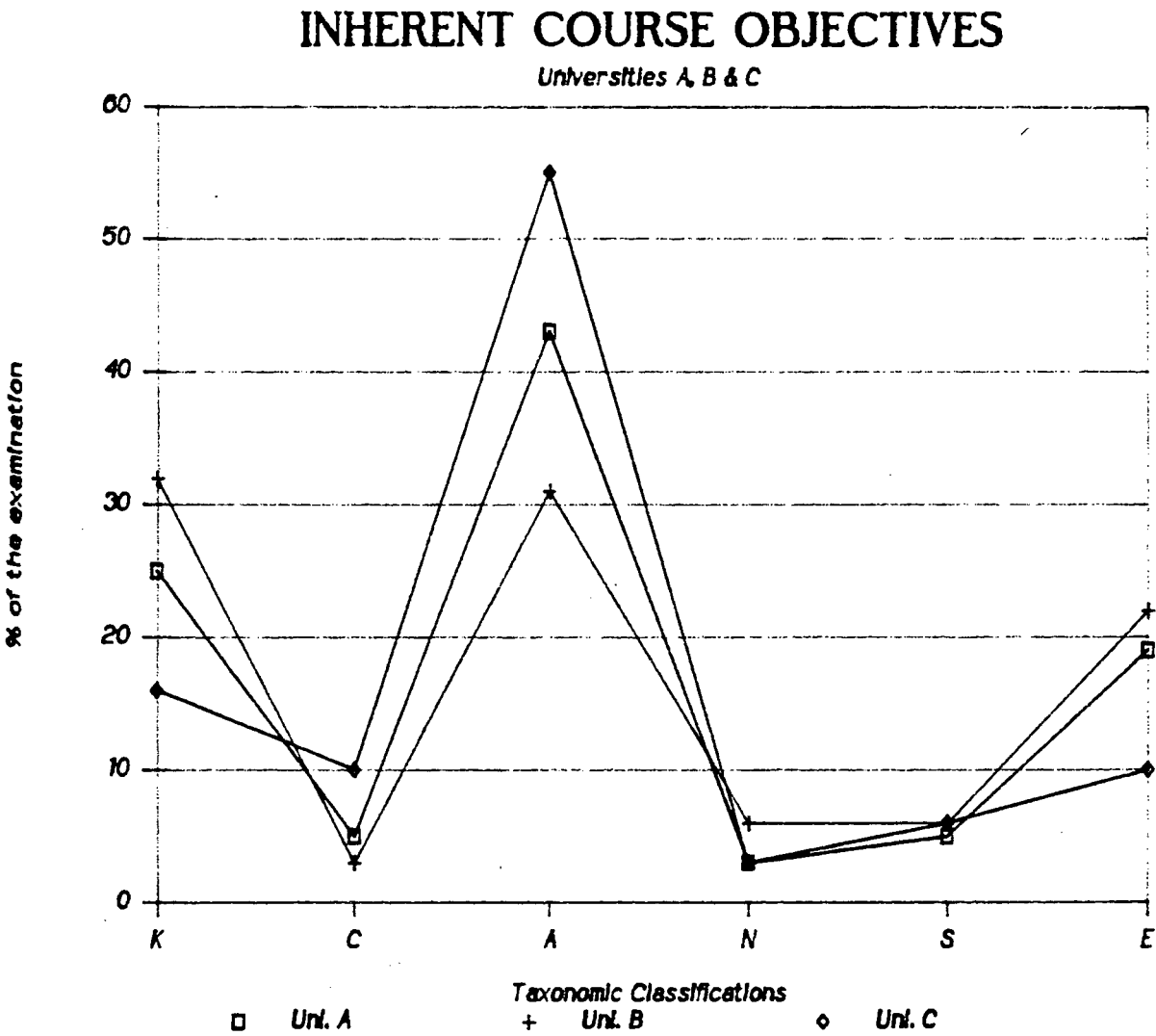
Table 5.5

**CLASSIFICATION OF EDUCATIONAL OBJECTIVES
INHERENT IN AUDITING COURSE EXAMINATIONS**

TAXONOMIC CLASSIFICATION*	UNIVERSITIES		
	<u>A</u>	<u>B</u>	<u>C</u>
1 Knowledge	25	32	16
2 Comprehension	5	3	10
3 Application	43	31	55
4 Analysis	3	6	3
5 Synthesis	5	6	6
6 Evaluation	19	22	10
Totals	<u>100%</u>	<u>100%</u>	<u>100%</u>

* Scores for taxonomic classifications are reflected as a percentage of the total marks for each university's examination papers.

FIGURE 5.2



examination questions improved between the first and second meetings. It would seem, therefore, that a greater degree of agreement among the judges could be achieved through practice and familiarization with the nature of the questions to be classified.

The inferential analysis of auditing examination questions did not produce precise results. However, the emphasis on Application, Knowledge and, to a lesser extent, Evaluation, was so clear that fine measurement has not been necessary to draw conclusions from the analysis. These results will form part of the input into the comparison of the inherent and stated auditing course objectives in the next chapter.

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CHAPTER 6

COMPARISON OF STATED AND INHERENT COURSE OBJECTIVES

1. INTRODUCTION

2. MEASUREMENT BASES

3. COMPARING STATED AND INHERENT COURSE OBJECTIVES

4. CONCLUSION

1. INTRODUCTION

The major question yet to be addressed is whether the stated educational objectives for the Auditing courses at the three selected universities match those inherent in their examination papers. Before this question can be dealt with, however, the problems relating to the bases of measurement used in this study warrant attention. In this respect the conclusions to be drawn from the findings presented in this chapter are subject to some limitation.

As discussed in previous chapters, the subjectivity involved in the process of classifying course objectives, particularly through the inferential analysis of examination questions, limits the potential for deriving precise results.¹ A second limitation relates to the lack of an absolute measurement basis for the comparison of stated and inherent objective scores. As a consequence, results of this comparison will provide indications of mismatches between stated and inherent objectives rather than exact deviations. There will, of course, be a reliable measure of deviations in a relative sense due to the common basis of measurement applied to all three universities subjected to comparison.

1 Refer, for example, to Seddon's review of judges reliability in classifying examination questions in: Seddon G M, The Properties of Bloom's Taxonomy of Educational Objectives for the Cognitive Domain, Review of Educational Research, Spring 1978, Vol. 48, No. 2, at page 306.

The results of comparisons do indicate instances of prominent mismatch. There can be little doubt about the existence of deviation in these instances, as the three universities do provide their own relational measurement basis. Conclusions arising from finer differences are, however, not possible, particularly in view of the aforementioned subjectivity involved in the classification of course objectives.

2. MEASUREMENT BASES

The basis of measuring stated course objectives was, of necessity, different to that used for the inferential analysis of objectives inherent in examination questions. To have either requested respondents to 'apportion' the 34 objectives over 100 percentage points in the case of stated objectives, or judges to 'rate' each classified question component out of ten could have imposed incumbrances on the gathering of data and possibly affected its reliability.

Stated objectives were established by respondents 'rating' each of the 34 objectives between 1 and 10. Equivalent percentages represented by these scores would be; 1 = 0 to 10%, 2 = 11 to 20% etc. Thus, each stated objective could

attract a score of up to 100%. The rating of inherent objectives, on the other hand, involved the taxonomic classification of examination questions and thereby the apportionment of 100 percentage points among the various taxonomic components of each examination paper analysed.

Thus, while stated objectives are distinctly related to each other, as are inherent objectives, the comparison of these two groups of objectives was not possible using the same measurement bases. The two sets of scores (stated and inherent) were measured on different scales. However, if the desired congruence between them existed, a deviation from the mean score for, say, the stated knowledge classification for University A, should relate to a similar deviation from the mean for the corresponding inherent score. Thus, the excess of a stated score over the mean should, in some way, be matched by a proportional excess of the corresponding inherent score over its mean. Thus in the case of University A's knowledge class objectives, the following formula would apply:

$$(\bar{X}_s - X_{s_k}) \approx (\bar{X}_i - X_{i_k})$$

where \bar{X}_s and \bar{X}_i represent the mean score for all stated and inherent objectives respectively, and X_{s_k} and X_{i_k} represent the mean scores for all stated and inherent knowledge class objectives respectively. The same would apply to each of the 5 remaining taxonomic classifications.

The problem, as already suggested, was the establishment of a scale on which to judge the congruence (or deviation) between each set of stated and inherent objectives. No absolute scale existed so that incongruities could only be measured on a relative scale. The first task, however, was to homogenize the stated and inherent scores.

A preliminary measure undertaken to homogenize the scores of the two sets of objectives was the scaling-up of stated scores by ten. The apportioning of inherent objectives over 100 percentage points meant that, theoretically at least, there could be up to 98 percentage points separating the highest and lowest classifications. In the case of stated objectives, however, this range was limited to 9 points. For the purposes of uniformity, therefore, stated objective scores were scaled-up by ten to represent percentage points. A summary of the stated² and inherent objective scores for the three universities is provided in Table 6.1.

Three different scoring methods were explored as possible bases for comparing the two sets of objectives. (The data and results of computations described below are contained in Table 6.2.) The three methods are:

2 The stated objective scores for each of the three universities are derived from the mean scores for each taxonomic grouping of the 34 educational objective ratings per the survey questionnaire.

Table 6.1

TAXONOMIC PROFILES OF UNIVERSITIES A, B & C

*Scores for educational objectives inherent in
examination papers and stated by each university*

<u>Taxonomic Class</u>	----- UNIVERSITIES -----					
	----- A -----		----- B -----		----- C -----	
	<u>Inherent</u>	<u>Stated</u>	<u>Inherent</u>	<u>Stated</u>	<u>Inherent</u>	<u>Stated</u>
Knowledge	25	8.7	30	6.0	16	8.9
Comprehension	5	9.5	3	8.3	9	6.8
Application	43	8.7	31	9.7	55	10.0
Analysis	3	9.6	7	9.0	3	8.6
Synthesis	5	9.5	7	8.8	6	8.3
Evaluation	19	9.0	22	9.3	11	7.5
Averages	16.7	9.2	16.7	8.5	16.7	8.3

Table 6.2

COMPARISON OF STATED AND INHERENT COURSE OBJECTIVES

UNIVERSITY A				DEVIATION FROM \bar{X} AS % OF								DEVIATIONS				Z-SCORES				Z-SCORES	
TAXO	SCORES		Z-SCORES		-- Mean --		-- Range --		-- Mean --		-- Range --		Z-Scores		Z-Scores		% of DIFF				
CLASS	STA	INH	STA	INH	STA%	INH%	STA%	INH%	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	STA%	INH%			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)					
Know	8.7	25.6	-1.1	0.6	-4.8	53.6	-47.0	22.1	101.2	-0.3	69.1	-0.1	1.8	-0.1	64.9	35.1					
Comp	9.5	4.7	0.9	-0.8	3.6	-71.8	35.8	-29.6	108.2	-0.1	65.5	-0.2	1.7	-0.2	51.3	48.7					
Apply	8.7	43.0	-1.3	1.8	-5.4	158.0	-53.4	65.2	212.2	1.8	118.6	1.7	3.1	1.7	41.7	58.3					
Anal	9.6	2.6	1.1	-1.0	4.7	-84.4	46.6	-34.8	131.7	0.3	81.4	0.4	2.1	0.4	53.9	46.1					
Synth	9.5	5.0	0.9	-0.8	3.6	-70.0	35.8	-28.9	106.4	-0.2	64.7	-0.2	1.7	-0.2	52.0	48.0					
Eval	9.0	19.1	-0.4	0.2	-1.8	14.6	-17.9	6.0	32.8	-1.6	23.9	-1.7	0.6	-1.7	72.2	27.8					
AVERAGE	9.2	16.7							115.4		70.5		1.8								
RANGE	0.9	40.4																			
STD DEV	0.4	14.5							52.9		27.9		0.7								

UNIVERSITY B				DEVIATION FROM \bar{X} AS % OF								DEVIATIONS				Z-SCORES				Z-SCORES	
TAXO	SCORES		Z-SCORES		-- Mean --		-- Range --		-- Mean --		-- Range --		Z-Scores		Z-Scores		% of DIFF				
CLASS	STA	INH	STA	INH	STA%	INH%	STA%	INH%	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	STA%	INH%			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)					
Know	6.0	30.3	-2.1	1.2	-29.3	81.6	-67.8	47.9	374.6	2.2	115.7	2.0	3.2	2.0	64.2	35.8					
Comp	8.3	2.9	-0.2	-1.2	-2.8	-82.6	-6.4	-48.5	54.7	-0.6	42.1	-0.1	1.0	-0.2	.0	100.0					
Apply	9.7	31.3	1.0	1.2	13.9	87.6	32.2	51.5	51.8	-0.6	19.2	-0.7	0.3	-0.9	.0	100.0					
Anal	9.0	6.5	0.4	-0.9	6.0	-61.0	14.0	-35.9	121.5	.0	49.8	0.1	1.3	0.1	33.1	66.9					
Synth	8.8	6.8	0.2	-0.8	3.1	-59.2	7.2	-34.8	90.3	-0.3	42.0	-0.1	1.1	-0.1	20.7	79.3					
Eval	9.3	22.3	0.6	0.5	9.0	33.7	20.8	19.8	56.3	-0.6	1.0	-1.2	0.2	-1.0	100.0	.0					
AVERAGE	8.5	16.7							124.9		45.0		1.2								
RANGE	3.7	28.4																			
STD DEV	1.2	11.7							114.4		35.7		1.0								

UNIVERSITY C				DEVIATION FROM \bar{X} AS % OF								DEVIATIONS				Z-SCORES				Z-SCORES	
TAXO	SCORES		Z-SCORES		-- Mean --		-- Range --		-- Mean --		-- Range --		Z-Scores		Z-Scores		% of DIFF				
CLASS	STA	INH	STA	INH	STA%	INH%	STA%	INH%	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	STA%	INH%			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)					
Know	8.9	16.3	0.6	.0	6.9	-2.2	17.7	-0.7	71.2	-0.2	18.4	-0.7	0.6	-0.6	96.4	3.6					
Comp	6.8	9.1	-1.5	-0.4	-19.0	-45.4	-48.8	-14.7	144.8	1.7	34.0	1.3	1.1	1.6	100.0	.0					
Apply	0.0	54.7	1.6	2.2	20.0	228.2	51.2	74.1	28.4	-1.4	22.9	-0.1	0.6	-0.6	.0	100.0					
Anal	8.6	3.4	0.3	-0.8	3.2	-79.6	8.2	-25.9	111.4	0.8	34.0	1.3	1.0	1.2	25.3	74.7					
Synth	8.3	5.4	-0.1	-0.6	-1.0	-67.6	-2.6	-22.0	57.4	-0.6	19.3	-0.6	0.6	-0.6	.0	100.0					
Eval	7.5	11.1	-0.8	-0.3	-10.0	-33.4	-25.7	-10.9	66.8	-0.3	14.8	-1.2	0.5	-0.9	100.0	.0					
AVERAGE	8.3	16.7							80.0		23.9		0.7								
RANGE	3.3	51.3																			
STD DEV	1.0	17.5							37.9		7.5		0.2								

UNIVERSITY A, B & C				DEVIATION FROM \bar{X} AS % OF								DEVIATIONS				Z-SCORES				Z-SCORES	
TAXO	SCORES		Z-SCORES		-- Mean --		-- Range --		-- Mean --		-- Range --		Z-Scores		Z-Scores		% of DIFF				
CLASS	STA	INH	STA	INH	STA%	INH%	STA%	INH%	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	SUM	Z-SCO	STA%	INH%			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)					
Know	7.9	24.1	-1.5	0.5	-9.0	44.4	-50.0	19.0	134.7	1.4	69.0	1.6	2.0	1.5	75.2	24.8					
Comp	8.2	5.6	-0.9	-0.8	-5.7	-66.6	-31.7	-28.6	9.3	-1.1	3.1	-1.0	0.1	-1.1	50.4	49.6					
Apply	9.4	43.0	1.5	1.9	9.0	157.9	50.0	67.8	67.4	0.1	17.8	-0.4	0.4	-0.7	13.9	86.1					
Anal	9.1	4.2	0.8	-0.9	4.7	-75.0	25.8	-32.2	121.6	1.1	58.0	1.2	1.7	1.0	37.4	62.6					
Synth	8.8	5.7	0.3	-0.8	2.0	-65.6	10.9	-28.2	45.9	-0.4	17.3	-0.4	1.1	0.3	24.2	75.8					
Eval	8.6	17.5	-0.2	0.1	-0.9	5.0	-5.1	2.1	4.2	-1.2	2.9	-1.0	0.2	-1.0	90.7	9.3					
AVERAGE	8.7	16.7							63.9		28.0		0.9								
RANGE	1.6	38.8																			
STD DEV	0.5	13.8							50.4		26.0		0.7								

* Mean-based deviations have been scaled-up by 10 for conformity with inherent objective score ranges.
 Note: Apparent calculation errors are due to rounding off to 1 decimal place. Exact figures (to several decimal places) were used for actual calculations.

- 1) The deviation from the mean, as a percentage of the mean, in respect of each of the six taxonomic classifications for stated and inherent objectives respectively (i.e. 'mean-based'). In the case of stated objectives, because the deviations were restricted to approximately one tenth of the inherent objective score deviations, the resulting deviations would have to be scaled-up by 10 when used.
- 2) The deviation from the mean, as a percentage of the spread of points between the highest and lowest scores (the 'range'), for each taxonomic classification (i.e. 'range-based'). The intention was to reduce the effect of the widely differing ranges of scores between sets of objectives and the three universities. A closer relationship between the scores of the three universities would provide a better basis for comparison, and particularly, a clearer benchmark against which to highlight abnormalities.
- 3) Z-scores (standardised scores) shared the aims of mean- and range-based deviations (per 1 and 2 above). In addition, they obviated the need to scale-up stated objective scores and provided a more acceptable mathematical basis for the task at hand.

The formulae representing each of the above scoring methods are:

Method 1:

$$P_{Sk} = \frac{S_k - x_s}{x_s} * 100 \quad \text{and} \quad P_{Ik} = \frac{I_k - x_I}{x_I} * 100$$

Method 2:

$$P_{Sk} = \frac{S_k - x_s}{R_s} * 100 \quad \text{and} \quad P_{Ik} = \frac{I_k - x_I}{R_I} * 100$$

Method 3:

$$Z_{Sk} = \frac{S_k - x_s}{\sigma} \quad \text{and} \quad Z_{Ik} = \frac{I_k - x_I}{\sigma}$$

Where:

- P_{Sk} and P_{Ik} represent the deviation in 'points' from mean for stated and inherent objectives respectively. The six taxonomic classes are represented by s_k and i_k respectively.
- s_k (to s_e) represents the scores for each of the six stated taxonomic classes.
- i_k (to i_e) represents the score for each of the six inherent taxonomic classes.
- x_s and x_I represent the mean scores for inherent and stated objectives for each university respectively. ie;

$$x_s = (S_k + S_c + S_a + S_n + S_s + S_e)/6 \quad \text{and}$$

$$x_i = (I_k + I_c + I_a + I_n + I_s + I_e)/6$$

R_s and R_i represent the range between minimum and maximum score for stated and inherent objectives for each university respectively.

Z_{sk} and Z_{ik} represent (standardised or) Z-scores for stated and inherent objectives respectively. Taxonomic classes are represented by k c a n s and e

σ represents the standard deviation for either stated or inherent objectives, as appropriate.

The mean-based, range-based and Z-score deviations from the mean for the six taxonomic classifications of both stated and inherent objectives were calculated in accordance with the three formulae above. The extent of each deviation was calculated on the basis of the difference between each stated and inherent score, as per the following formula:

$$D_k = |DS_k - DI_k|$$

Where:

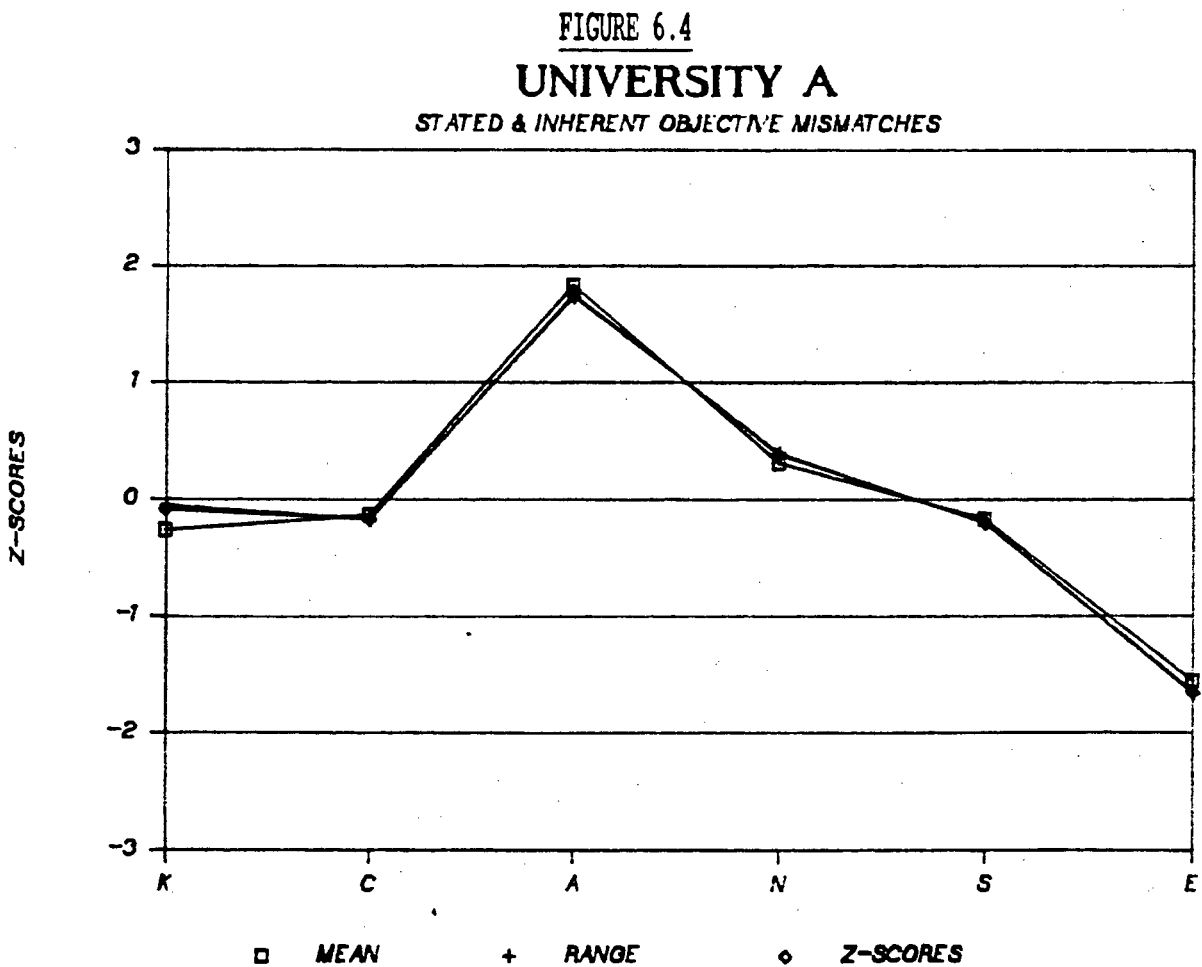
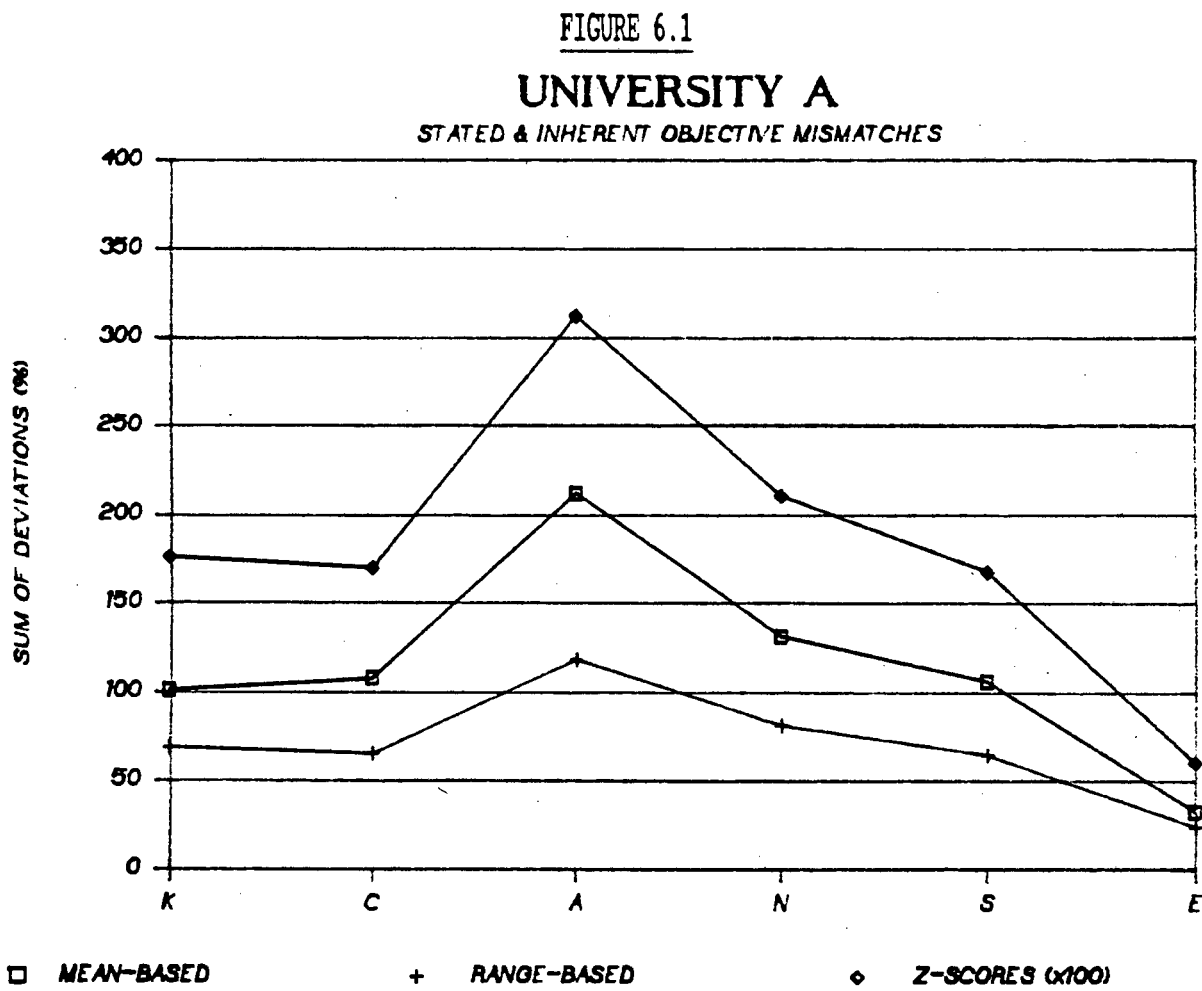
D_k represents the absolute difference of the stated and inherent deviations, calculated on the 'points' distance between them, for the knowledge classification. D_c , D_a , D_n , D_s , and D_e would accordingly represent each of the other five classifications.

DS_k (and DI_k) represent the deviations for each of the two sets of objectives, stated and inherent, for the knowledge classification. The remaining five taxonomic classifications would be represented by c a n s and e .

The sum of the deviations calculated in accordance with the formula above represented percentage 'points' in the case of mean-based and range-based deviations. The sum of the Z-score deviations were expressed in units of standard deviation.

In order to visualize the nature of, and relationship between, these three scoring methods, they were graphically depicted in two ways. Firstly, the sum of the deviations for the three methods were plotted separately for each university. For the purposes of this comparison, Z-scores were scaled up by 100. Refer Figures 6.1 to 6.3. The second view of these three scoring methods involved the standardising of the scores for all three methods (including Z-scores of Z-scores). The resulting Z-scores are graphically presented in Figures 6.4 to 6.6.

For university A, (Figure 6.1), although the scales are obviously different, there is a distinct proportional relationship between them. This is corroborated by the related Z-scores in Figure 6.4 and suggests that any of the three methods would reflect university A's stated and inherent objective mismatches. This would, of course, be subject to determining comparability, particularly with regard to comparability of the scales, of the methods in respect of the other universities.



In the case of universities B and C, clear signs of disproportion are visible between the three scoring methods (Figures 6.2 and 6.3 respectively). For university C, using the range-based deviations in Figure 6.3 for the measurement of mismatches in relation to the other universities would produce results different from those based on either of the other two methods. The Z-scores (Figure 6.5 and 6.6 respectively), while illustrating a clearer pattern, do emphasize the disproportion between the methods.

The basis of measurement selected was required to meet the need for effective standardization to counter the different score ranges of both stated and inherent objectives as well as those of the three universities. The mean- and range-based methods would not have satisfied the latter requirement of a standard for comparison between the three universities. Without this, the relative prominence of mismatches between stated and inherent objectives would not have been properly discernible. Thus, of the three methods investigated, Z-scores best met the above requirements and at the same time eliminated the differences between stated (out of 10) and inherent (out of 100) objective scoring scales.

FIGURE 6.2

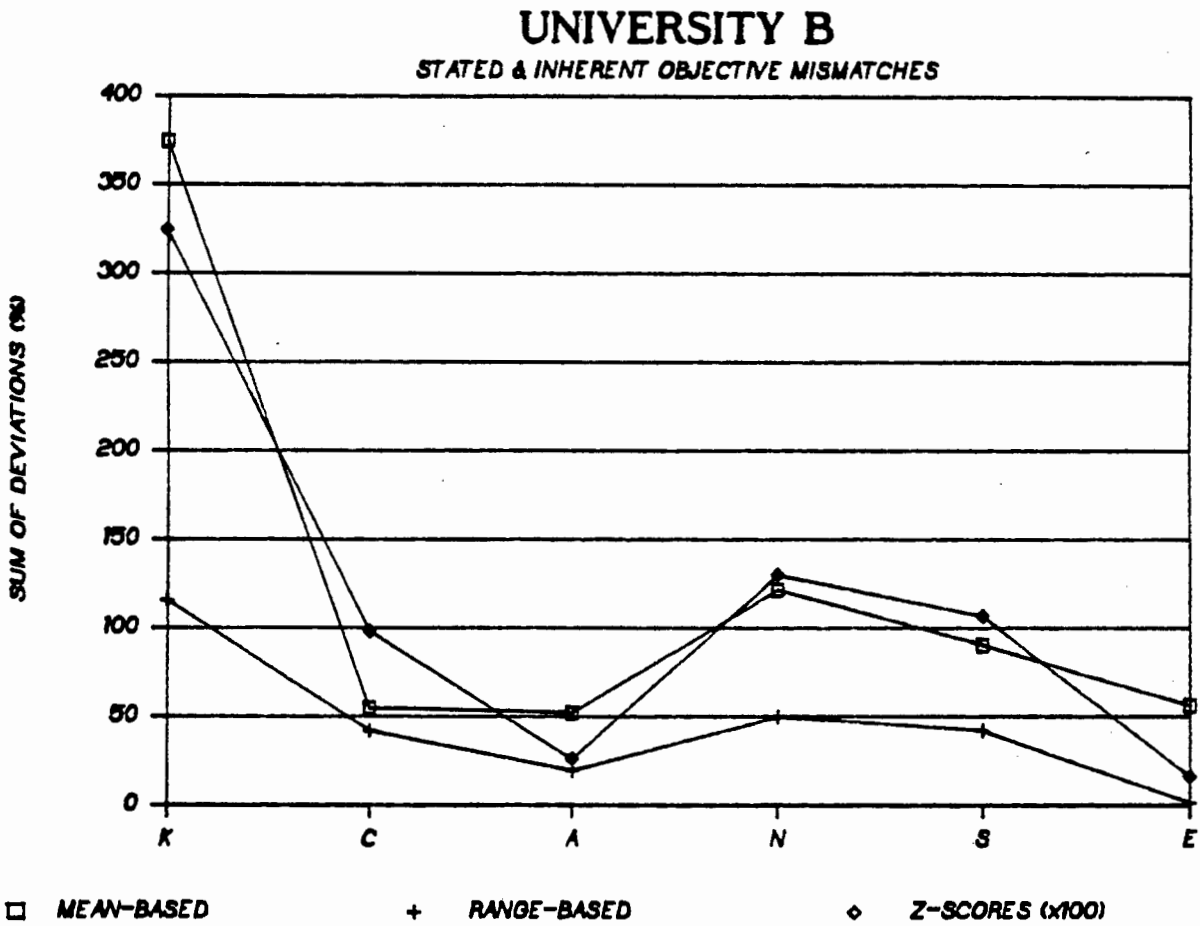


FIGURE 6.5

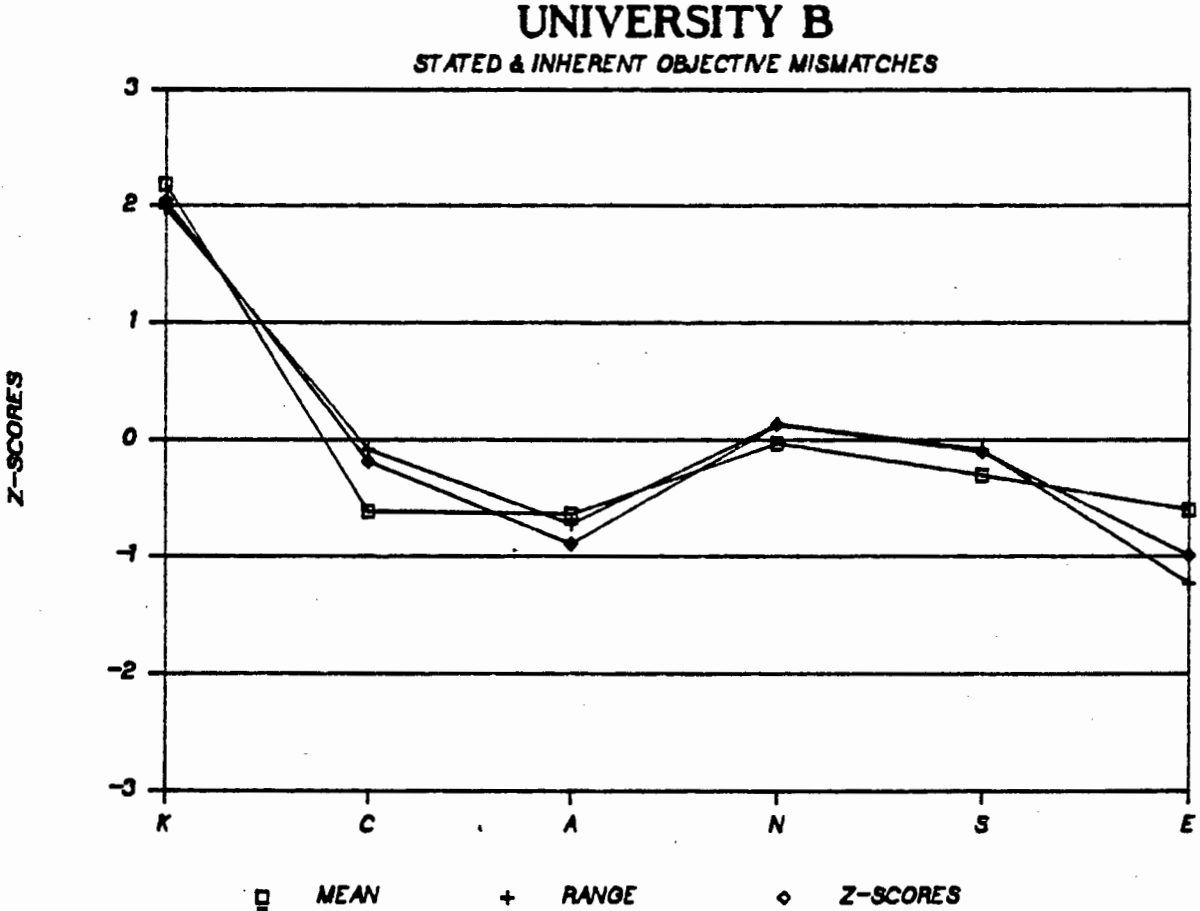


FIGURE 6.3

UNIVERSITY C

STATED & INHERENT OBJECTIVE MISMATCHES

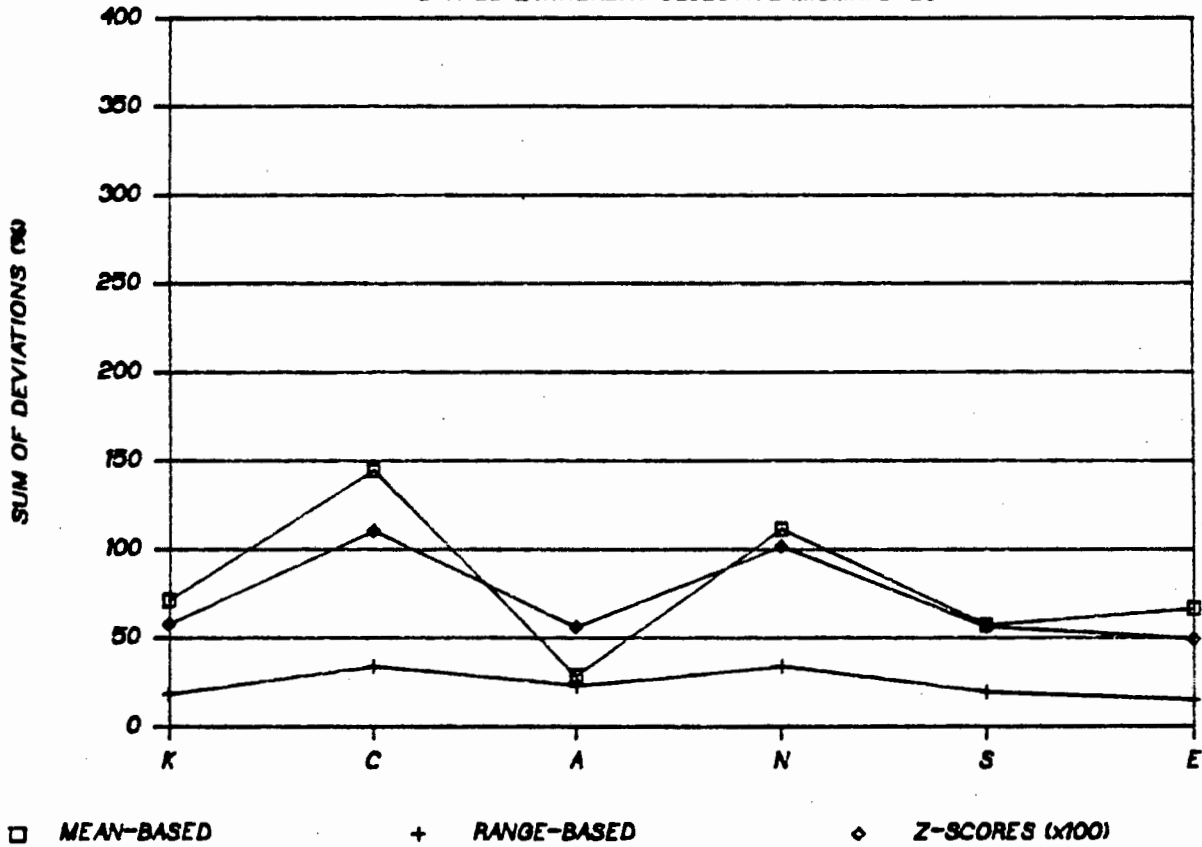
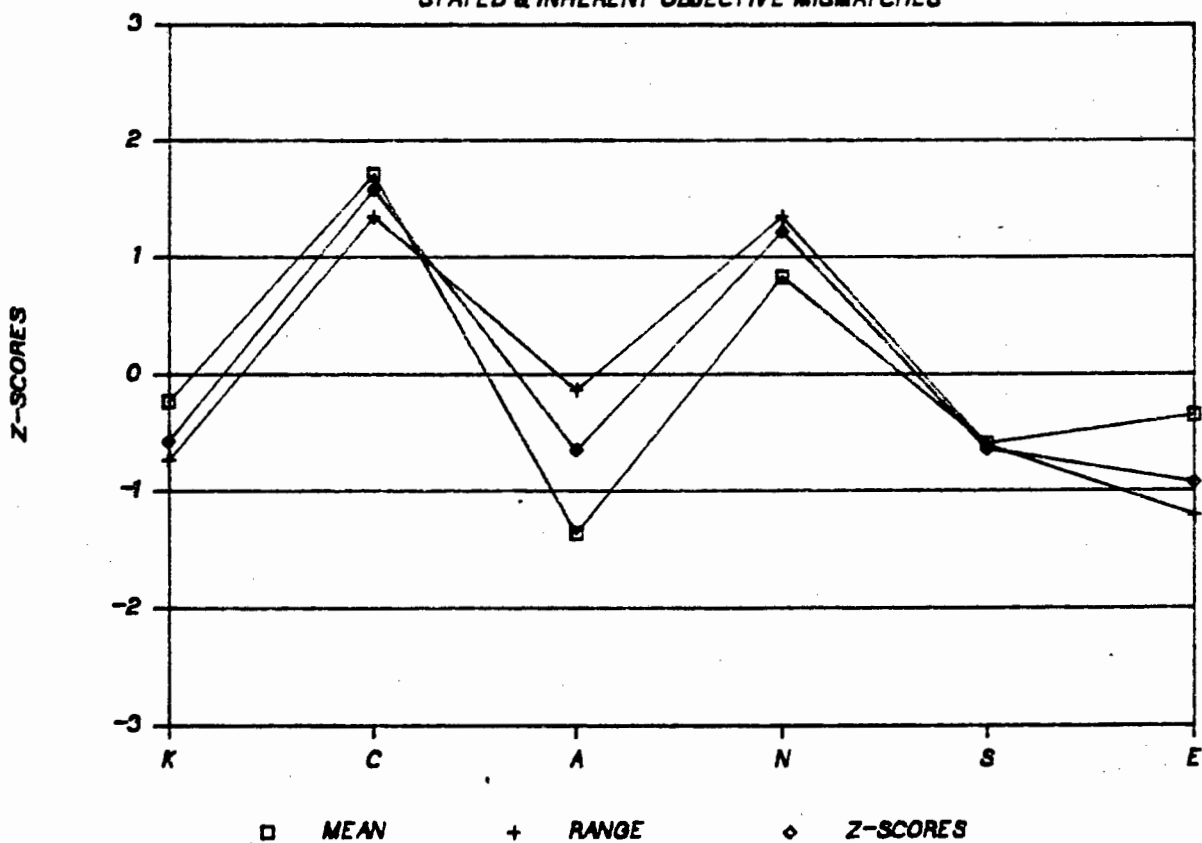


FIGURE 6.6

UNIVERSITY C

STATED & INHERENT OBJECTIVE MISMATCHES



3. COMPARING STATED AND INHERENT COURSE OBJECTIVES

As a starting point, Table 6.3 provides an overview of the general pattern of mismatches between stated and inherent objectives. The six taxonomic classifications for stated objectives were ranked in order of importance (ie. in descending order of mean scores) alongside the corresponding list for inherent objectives in respect of each university. Quantitative measures of these mismatches will be subsequently examined.

University A displays a completely inverted relationship between stated and inherent objectives in respect of all six taxonomic classifications. University B displays a well matched relationship between stated and inherent objectives; except for knowledge which (with a deviation totaling 385 percentage points) exhibits the most prominent mismatch of all classifications for all three universities. The mean scores for all university B's stated knowledge-type objectives averaged only 60 percentage points (in a range of 60 to 97 with a mean of 85), as opposed to inherent knowledge-type objectives which constituted 32% of all their examination questions. This mismatch was not the result of a few errant examination questions; 24 out of the 27 question components subjected to inferential analysis were judged to have some inherent knowledge content.

Table 6.3

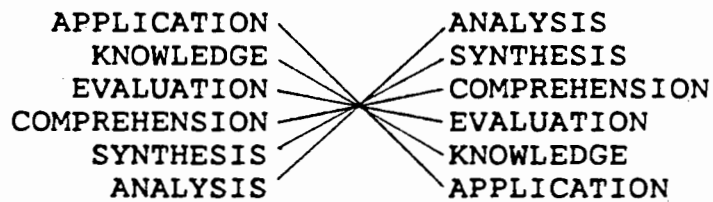
A GENERAL COMPARISON OF STATED AND INHERENT OBJECTIVES

Listed in decending order of importance

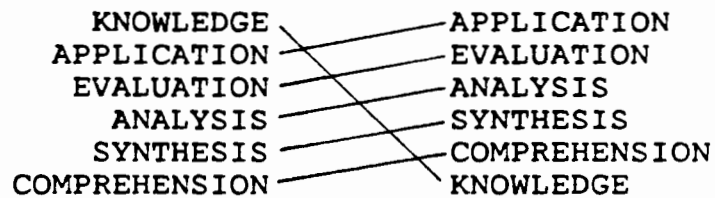
STATED

INHERENT

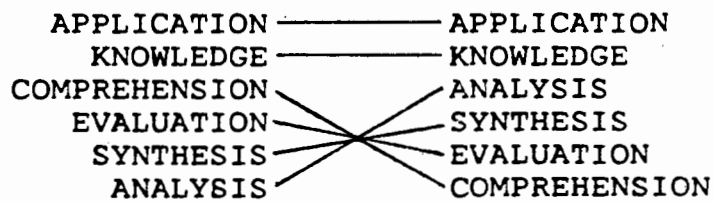
UNIVERSITY A



UNIVERSITY B



UNIVERSITY C

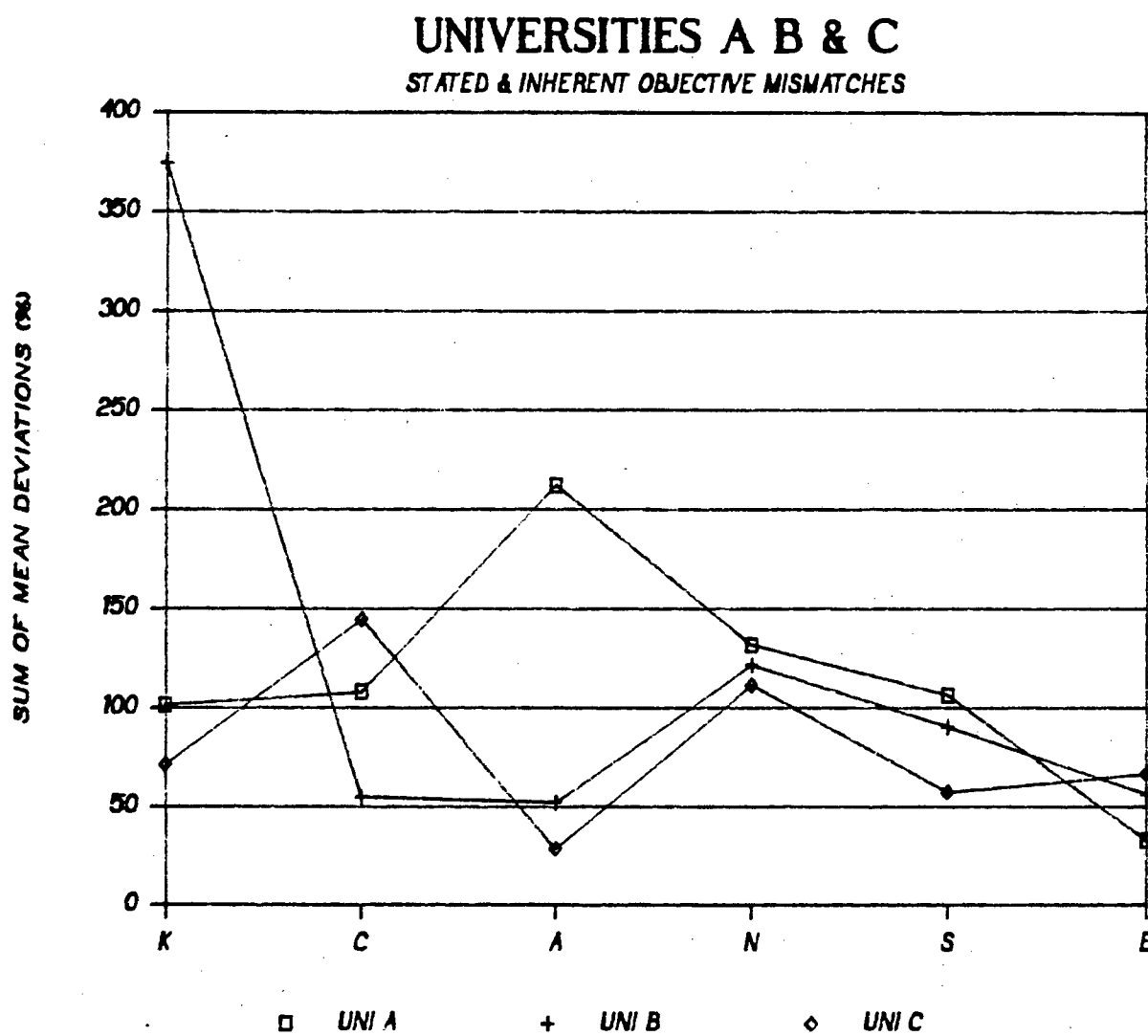


University C appears to have achieved a good match between its two most highly rated stated and inherent objective classifications, application and knowledge. The remaining four classifications do, however, exhibit a complete inversion.

By introducing quantities and graphic presentation, the qualitative picture in Table 6.3 takes on an added perspective. The mismatches presented in Figure 6.7 are measured in absolute scores; i.e. the sum of the mean deviations (in percentage points). The extent of university A's worst mismatch (in respect of the application classification) is just over half that of university B's (in respect of the knowledge classification). That university A suffers from generally poor matching is corroborated by the fact that four of its remaining five taxonomic classifications are mismatched at or above the 100 percentage points level.

University C appears to have the best matching of all the universities. Apart from comprehension (its worst mismatch) and analysis, all the remaining taxonomic classifications reveal relatively low levels of mismatching.

FIGURE 6.7

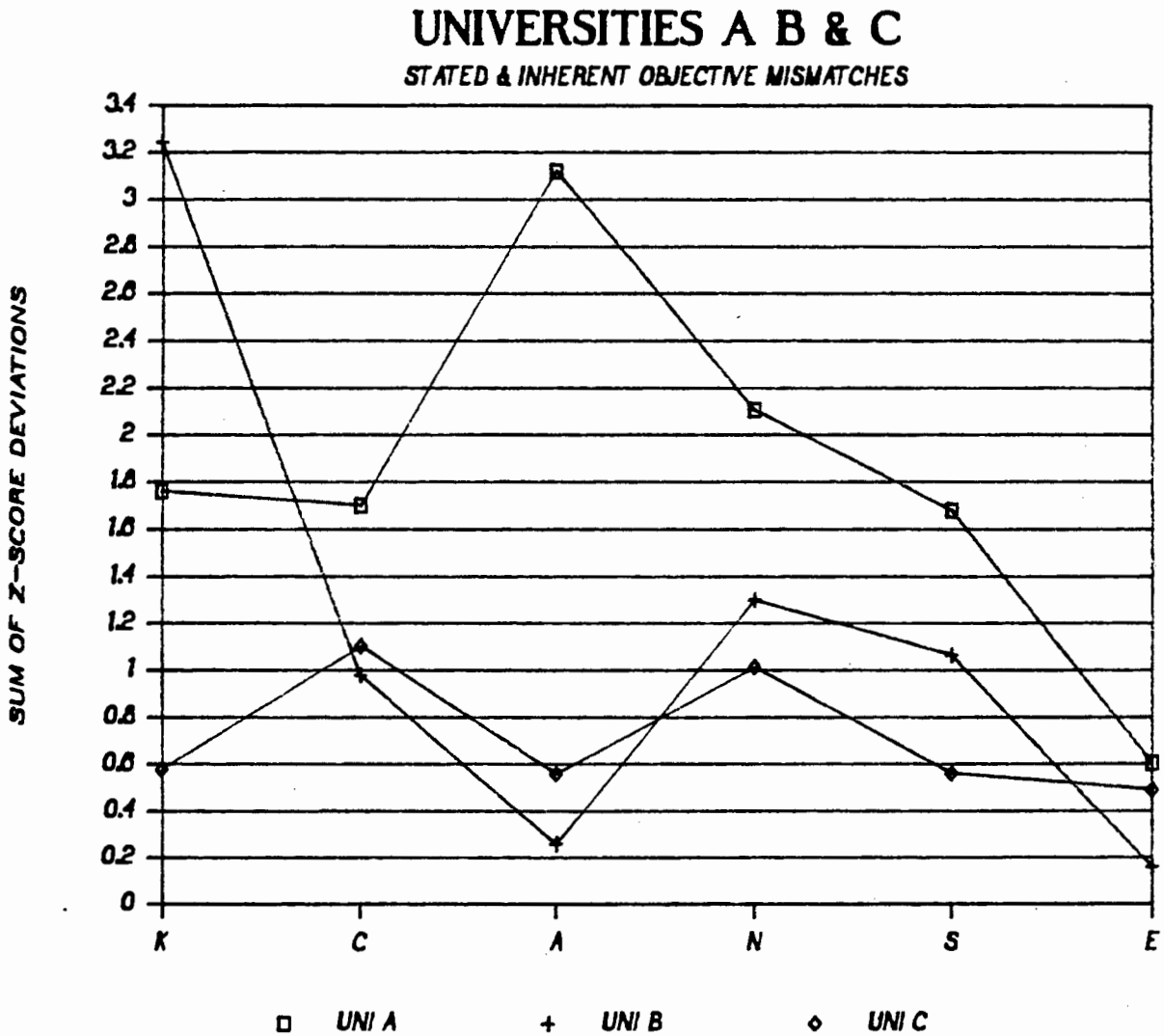


While the values in Figure 6.7 do provide an important measure of the absolute position of each university's mismatches, it does not provide an effective basis for examining the relative positions of the three universities. Is, for example, the mismatch on knowledge (385 percentage points) for university B nearly twice as bad as university A's mismatch on the application classification (212 percentage points)? The use of Z-scores, discussed below, provide the answers.

Using the sum of the deviations of Z-scores (i.e. the distance between stated and inherent Z-scores expressed in positive values), the picture presented in Figure 6.7 should change. The effect of this change should be to reduce the effect of extreme scores for the university with relatively large fluctuations in its scores, and, perhaps more importantly, highlight inconspicuous deviations in the case of the university with relatively small fluctuations in its scores (and therefore more sensitive to fluctuations).

Figure 6.8 illustrates this position using the sum of the Z-score deviations (i.e. the distance between stated and inherent Z-scores; refer Table 6.2). This graph highlights university A's position as the one suffering generally from a higher level of mismatches than the other two universities. The high level of mismatch on its application

FIGURE 6.8



classification is accentuated by the fact that this classification is among the best matched for the other two universities. Furthermore, it would appear from Figure 6.8 that university B's mismatch on knowledge (3.35) is not, in relation to each university's respective standard deviations on scores, nearly twice as bad as university A's mismatch on application (3.14), as was suggested in Figure 6.7.

Evaluation appears to be well matched by all three universities. This view is, however, better illustrated by Figure 6.9 which presents the average of the Z-score deviations for all three universities combined on the six taxonomic classifications. Similar graphs for each of the three universities individually are presented in Figures 6.10, 6.11 and 6.12. The stacked-bars were used to reveal the extent to which the stated and inherent objectives contributed to each of the deviations. The contribution of each of these objectives was calculated on the basis of the extent to which each contributed to the total deviation. For example; (with reference to Table 6.2), of the total deviation of 97.64 percentage points on knowledge for university A, 47.6 of which were contributed by stated objective deviation, and 50 percentage points by inherent objective deviations. In the case of comprehension for university B, the total deviation of 54.11 percentage points was contributed solely by the inherent objective deviation

FIGURE 6.9

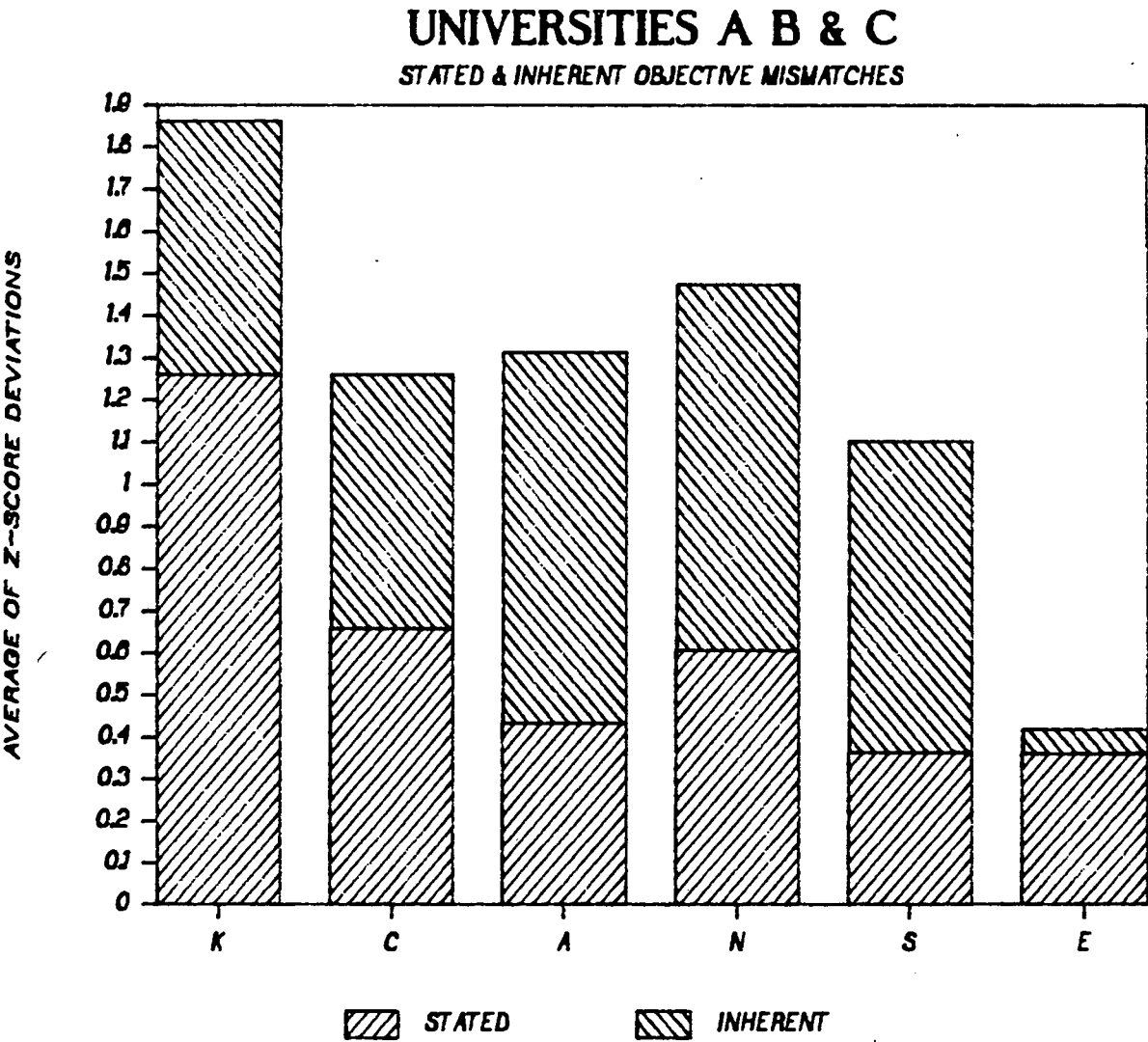


FIGURE 6.10

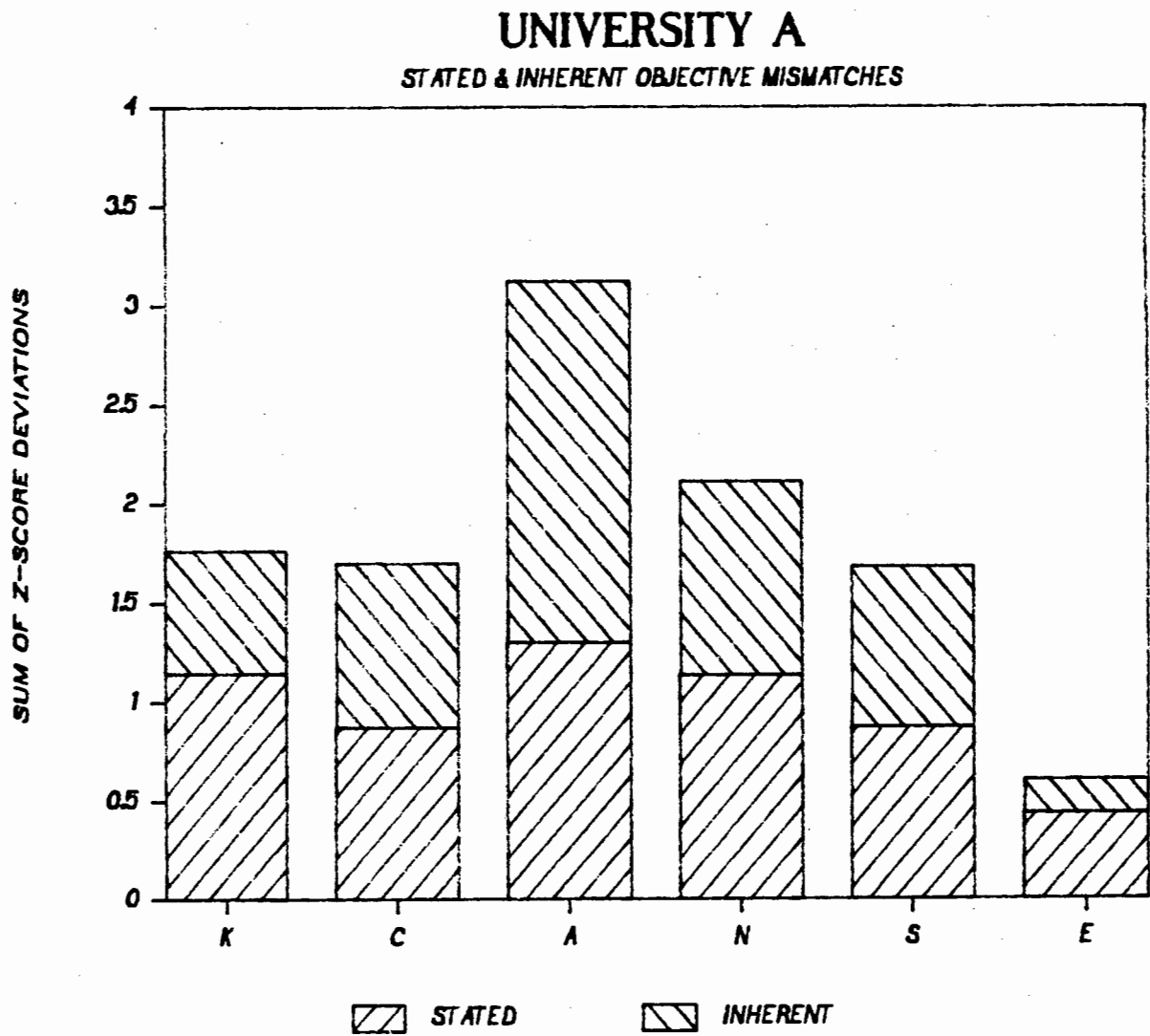


FIGURE 6.11

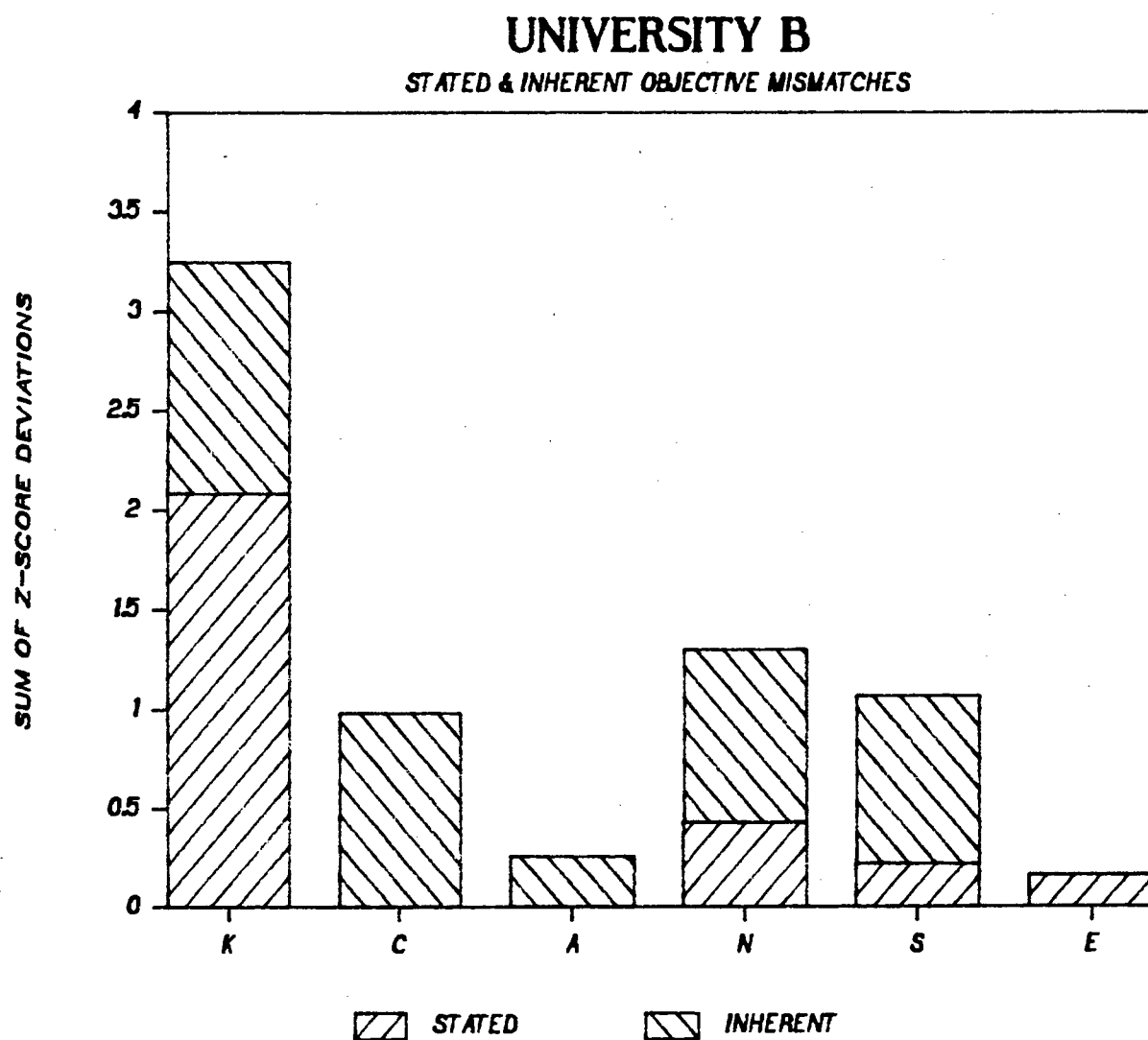
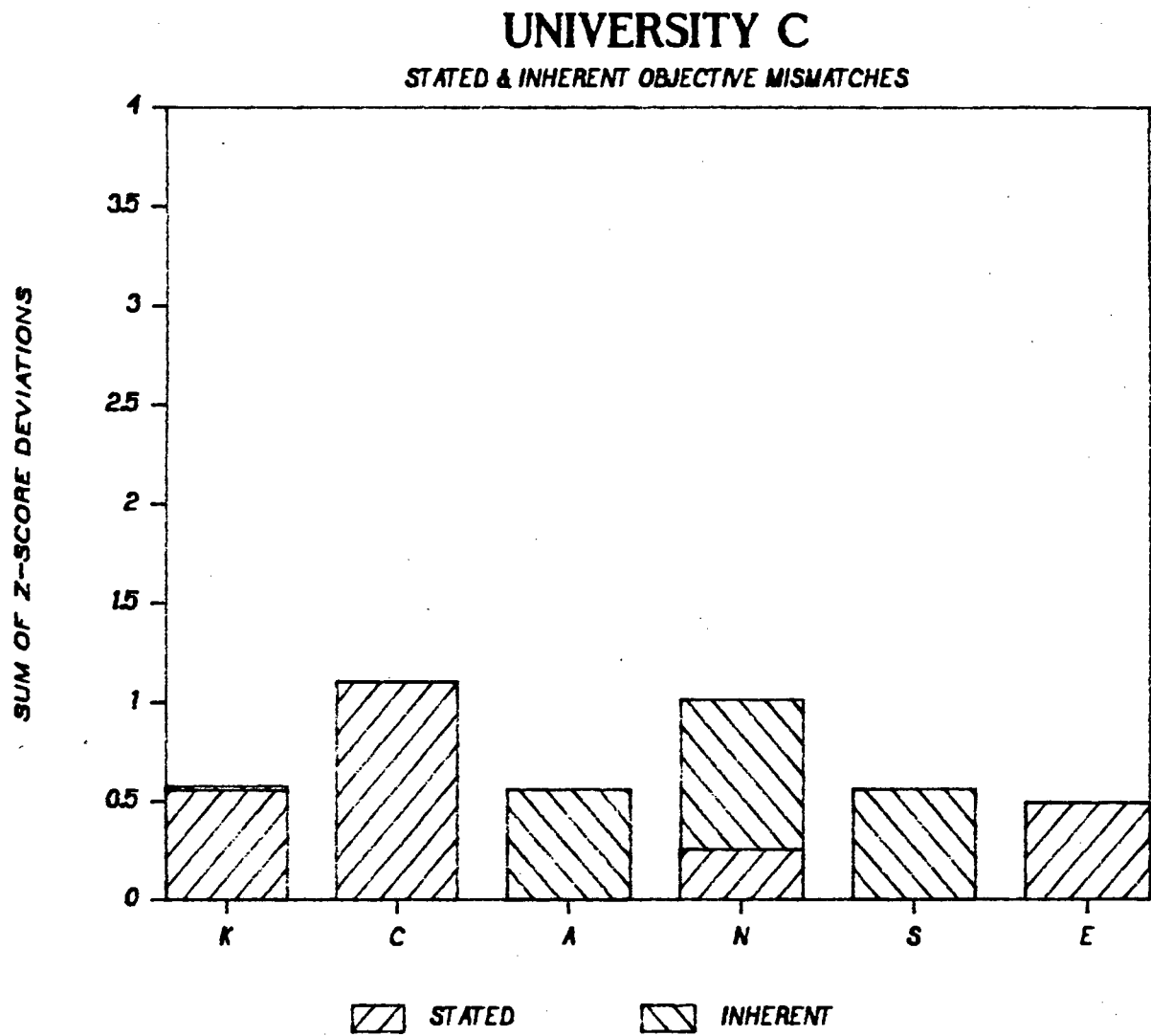


FIGURE 6.12



as this exceeded the stated objective deviation (both negative) by that amount.

The major deviation revealed by Figure 6.9 could be said to be due primarily to university B having rated its stated objective on the knowledge classification (at 60 percentage points), significantly below the mean rating (at -2.08 units of standard deviation), and, at the same time, devoting significantly more than the mean for inherent objectives (at 1.26 units of standard deviation or 32 percent of all its examination questions) to knowledge-type examination questions.

The analysis classification surpasses application as the second most mismatched classification by all three universities combined. This is due to the fact that all three universities show consistently high deviations (approximately 120 percentage points) on this classification.

4. CONCLUSION

Quantification has been meaningful in a relative rather than an absolute sense. There is compelling evidence of mismatch

between some of the stated and inherent objectives of the three universities studied.

Mismatches between the stated and inherent knowledge-type objectives in the case of University B, and in the stated and inherent application-type objectives in the case of University A, are undeniable. The scale against which the seriousness of these mismatches have been measured is relative. It is, therefore, not possible to judge the seriousness of the finer deviations arising. A study involving a greater number of universities could provide better indications of a benchmark against which to judge these. The data and graphs do suggest that the seriousness of University B's mismatch is confined to the knowledge, and possibly the analysis classifications, while with University A, the evaluation class is the only classification which does not suggest a possible mismatch.

The scale of University C's mismatching is generally lower than the other two universities. Comprehension and Analysis are the two prominent mismatches. The other four represent diminishing possibilities in this regard.

As the conclusions drawn from the comparisons of stated and inherent objectives in this chapter suggest, precise judgments on fine deviations are not possible. This chapter

has also focused on the bases of measurement and their limitation as precise indicators of deviations from 'the norm'. However, whether or not the scoring method is precise, there will always be an element of imprecision in the basis of measuring deviations due to the subjective judgment involved in the process of creating the data. The taxonomic classification of stated and inherent objectives is a subjective process.

A number of possibilities for further study present themselves as a result of the comparisons carried out in this chapter. These are addressed, together with other possibilities, in the next chapter.

CHAPTER 7

IMPLICATIONS AND RECOMMENDATIONS

- 1. INTRODUCTION**
- 2. MISMATCHING OF STATED AND INHERENT
COURSE OBJECTIVES**
- 3. STUDENTS AND THE COMMUNICATION OF
COURSE OBJECTIVES**
- 4. THE TAXONOMIC CLASSIFICATION PROCESS**
- 5. EDUCATIONAL AIMS**
- 6. EDUCATIONAL RELEVANCE OF COURSE OBJECTIVES**
- 7. THE QUALIFYING EXAMINATION**

1. INTRODUCTION

In this chapter a number of issues are discussed with regard to their implications, and, where appropriate, consequent recommendations are put forward.

The contextual nature of the inferential analysis is raised so that discussion of the results are considered in the correct perspective. However, the central issue of this study, the mismatching of some stated and inherent objectives, gives rise to implications concerning educational effectiveness, particularly with regard to the potential for misleading students. Recommendations are put forward on the issues of approaches to formulating stated objectives and the setting of examination questions.

For students the implications of the mismatching which occurred suggests a need for further study in this area. Did the universities concerned issue clearly stated course objectives? If so, to what extent were students guided by these? These are questions which warrant further investigation. It would seem also, that the sources used by students to determine the objectives of a course should be of importance to educationists.

Much attention has been devoted to the choice and use of a classification system for course objectives. Bloom's taxonomy has been on trial and, subject to the limitations already discussed, has proved successful. Attention is given in this chapter to the implications of, and recommendations relating to the achievement of higher levels of perfect agreement among the panel of judges in the inferential analysis of inherent objectives.

Educational aims of auditing courses at South African universities are raised for the first time in this chapter. Having gathered this data originally as an exploratory exercise it would not be appropriate to conclude this study without reference to the results obtained. Specifically, two implications are considered: firstly, whether any direct correlation between aims and objectives is apparent and, secondly, indicated differences between the views of the universities and those of the profession.

The educational relevance of auditing course objectives is an issue which demands some attention in terms of placing much of the discussion regarding these objectives into a broader perspective. Relevance is examined in terms of validity which is concerned with the views of auditing practitioners, internal consistency and ERCOM's auditing syllabus.

Finally, a recommendation is put forward for monitoring the internal consistency of the QE with reference to the relationship between the objectives specified in the ERCOM syllabus and those inherent in the QE.

2. MISMATCHING OF STATED AND INHERENT COURSE OBJECTIVES

Bases of scoring to identify mismatches among the classifications of the stated and inherent course objectives of each university, and among the three universities subjected to inferential analysis were developed in Chapter 6. The comparison of stated and inherent course objectives of the three universities studied revealed a number of mismatches of relative prominence.

Standardized (Z-) scores provided a comparative measure of mismatches among the six taxonomic classes for each university as well as for the three universities relative to each other. Of particular concern, however, was the mismatch between the stated and inherent course objectives of each university.

An analysis of University B's position indicated a prominent mismatch between its stated and inherent knowledge-type objectives: 64% of this mismatch was due to the deviation (measured in Z-scores; refer to column (O) of Table 6.2) of the stated knowledge-type objectives. That is; University B stated that its knowledge-type objectives were considerably less important than the average importance of all stated objectives but the converse was reflected in the related examination papers.

The only other prominent mismatch occurred between the stated and inherent application-type objectives of University A. Of this mismatch, 58% was due to the deviation (refer to column (P) of Table 6.2) of the inherent application-type objectives.

In the case of both Universities A and B above, the mismatches were exacerbated by the fact that the respective stated objective classes were, in each instance, rated lowest while the respective inherent objective classes were the most highly rated taxonomic class.

No other mismatches as noticeably prominent as the two cited occurred among any of the other taxonomic classes of objectives among the three universities. However, based on Z-score comparisons, the general level of mismatch was

higher for University A than either of the other two universities. (Figure 6.8 refers).

Without a more precise basis for measuring differences between stated and inherent course objectives it is not possible to identify some of the finer mismatches that occur. While there are, no doubt, possibilities for improving the basis of measurement, and recommendations in this regard are put forward elsewhere in this study, the examination questions for auditing courses at South African universities do appear to be more difficult to analyse precisely than other subjects which are more precise in nature (for example; Mathematics or Chemistry) and/or where objective (multiple-choice) testing is used. *

The implications of the analysis revealing, as it did, some mismatching between stated and inherent objectives, were intended to be, and remain, contextual in terms of statistical projection. Without conducting an inferential analysis of the inherent objectives of a larger sample of the seventeen universities, and/or extending this analysis over more than one academic year, it is unlikely that generalisations would be possible. However, even such an extended analysis would be at risk in providing valid generalisations because of the small population involved and the possible lack of homogeneity among the universities.

Thus, while there is no intention to draw statistically valid conclusions regarding all seventeen universities, the implications that the nature of the problems revealed by this analysis of three universities exist at some of the other fourteen universities is a possibility that could not be discounted without further investigation.

The mismatching that occurs between stated and inherent course objectives results from a lack of connection between the two. At any stage between the design of a course and the final examination of its students, a failure to connect stated and inherent objectives could result in mismatching. As suggested, it is possible that there are not, or at least not clearly articulated, objectives for some auditing courses at South African universities.

The situational or case study-type questions typical of auditing examinations suggests that the process of setting examination questions is not a simple case of selecting an objective (and its taxonomic character) and framing an appropriate question. (This method would appear to be feasible in the case of objective-test questions.) The setting of auditing examination questions often requires some imaginative thought in relation to the situational setting as well as attempts to combine more than one issue or topic

in a single question. The additional requirement of incorporating one or more of the course objectives would tend to complicate the process of creating a new question.

It may, therefore, prove effective to set auditing examination questions without reference to course objectives and subsequently identify their inherent objectives. The matching of stated and inherent objectives would then have to be achieved by selecting from questions set (from a stock of questions) on the basis of the inherent objective profile of the examination paper required to match the stated course objectives.

This approach presupposes that some (otherwise acceptable) examination questions set may not be usable in a particular year. This practice would be similar to that adopted by the Education Committee of the PAAB in setting the Qualifying Examination.

The setting of stated course objectives is a part of the educational process that deserves further investigation. However, indications of some prominent mismatches between stated and inherent objectives revealed by this study suggest an approach to setting stated course objectives which could improve the outcome of the process by achieving more reliable and communicative stated objectives.

The customary approach to setting course objectives is, as Mager (1975 p.2) suggests, during the 'design' phase, before the course is 'implemented'. The final process of the implementation phase would be the evaluation of students' achievement of the course objectives. This could be described as a deductive approach to the learning process.

The nature and aims of auditing courses at South African universities have tended to change gradually over the years rather than substantially in any one year. One of the major reasons for this 'stability' has been the influence of the Qualifying Examination on these courses. The annual objective-setting process in auditing would, therefore, usually involve a review rather than the formulation (or fundamental re-formulation) of objectives envisaged by Mager's phases of course construction.

This review process could, it is suggested, be considerably more effective in achieving more reliable stated objectives and better matched stated and inherent course objectives if an inductive rather than an deductive approach to this process were employed. Because the nature and aims of auditing courses are unlikely to change substantially from year to year, the first point of reference in reviewing

stated course objectives should be the inherent course objectives from the past two to three years' examinations.

It is not suggested that the inherent course objectives from recent years should be the only point of reference. Such a limitation could inhibit the vital dynamic required to maintain the relevance and academic standards of a course and make no allowance for the possibility that the inherent objectives of past examination papers are educationally unsuitable. Many other environmental factors would have to be considered. The inductive approach would, however, provide a focal point that could, at least, help make the setting of stated course objectives a more conscious process and result in better matching of stated and inherent objectives.

3. STUDENTS AND THE COMMUNICATION OF COURSE OBJECTIVES

For students of University B who relied on stated course objectives, the emphasis on knowledge-type questions in the examinations (32% of all examination questions) would have been unexpected. Their university rated knowledge-type objectives below the mean of all objectives by just over 2

units of standard deviation. This deviation was more than twice as large as the next largest deviation (Table 6.2 refers). A compensating factor in this case may have been that from stated course objectives application-type questions would have been expected to constitute the single biggest taxonomic component of the examination papers, whereas a 'lower' level taxonomic class in the form of knowledge-type questions did in fact predominate. In the nature of typical auditing examinations this could be roughly described as more 'recall' and less 'problem-solving'.

Students of University A would have been expecting an emphasis on Analysis, Synthesis and Comprehension-type questions in the examination had they relied on stated course objectives for guidance. They would, however, have been seriously misled as 87% of the actual examination paper was devoted to the other three taxonomic classes. More specifically: 43% of the paper was devoted to Application, 25% to Knowledge and 19% to Evaluation-type questions. (Table 6.2 refers)

Generally, in the case of University C, the levels of mismatch between stated and inherent objectives was lower than in the case of the other two universities. There was certainly no single mismatch approaching the extent of those

in the Knowledge and Application classes in the case of Universities B and A respectively.

The implications for students receiving misleading information on the criteria for success in a course are potentially serious. How can an educational system claim to require a certain set of intellectual abilities for success, yet evaluate students on a prominently different set of abilities?

This could create a communication problem that is detrimental to the learning process due, for example, to students not being well-directed towards the real course objectives from the start of the course. It is also possible that some universities do not state their course objectives in any articulated form. The questionnaire used for this study may have evoked a statement of educational objectives that did not otherwise exist.

This study did not investigate the extent to which universities communicate clearly articulated stated course objectives to students. Such 'good' practice may, however, have been to students' disadvantage in the case of Universities A and B. Another important factor that would provide valuable information on the problem of misleading communication to students on course objectives is the

sources used by students to determine course objectives. Could it be, for instance, that many auditing students conduct analyses of past examination papers to determine the course objectives? This possibility could raise fundamental questions for educationists.

While there clearly is a potential problem through misleading communication of educational objectives there are two related issues which may also warrant further investigation. Both the problem of where students source their educational objectives and the effect of clearly stated but misleading educational objectives on students might be worthy of study.

4. THE PROCESS OF CLASSIFYING EDUCATIONAL OBJECTIVES

Of all available classification systems Bloom's taxonomy has been one of the most extensively used, in spite of the critical attention it has received during the 30 odd years of its existence. Its particular shortcomings have been examined in depth in Chapter 3. It has proved usable on this study. The experience gained from using it for the classification of auditing course objectives has indicated

possibilities for improving its effectiveness for similar studies in future.

In Chapter 5 attention was given to the use of the taxonomy for the inferential analysis of the inherent objectives of examination papers. In a relative comparison of the extent of perfect agreement between judges analysing the taxonomic character of examination papers in various subject areas, auditing examination questions appeared to be more difficult to analyse precisely. (Refer Table 5.4).

While the reasons for these differences are examined in some detail in Chapter 5, two major contributory factors emerged. Firstly, the lack of preciseness in auditing as a subject (and practice) in relation to many of the science subjects, for instance, meant that high levels of perfect agreement among judges were more difficult to achieve. Secondly, the levels of perfect agreement among the judges of the three other studies most comparable with this study resulted from the classification of objective-test questions which favour a more precise taxonomic classification than is possible with the situational problem-type examination questions common to auditing.

Two recommendations arise out of the experience of conducting an inferential analysis of auditing examination

questions. Firstly, judges must not only be familiar with the taxonomy but also its application to the subject matter being analysed. It is probable that the levels of perfect agreement among judges could be increased through more extensive preparation; and in particular, practise with applying it to auditing examination questions.

Secondly, by restricting judges to a choice of no more than two taxonomic classes on any single question component analysed there would be less dispersion of their classifications. In the studies by both Herron (1966) and Poole (1971 and 1972) judges were limited to a single taxonomic classification for each question analysed. Such limitation, it is submitted, while certainly likely to improve levels of perfect agreement among judges, would not be appropriate for the analysis of auditing examination questions. The six examination papers subjected to inferential analysis in this study contained a total of 40 questions. These were, in turn, broken down into 85 separate question components. In spite of breaking down the questions into smaller units, 20% of all the judges' allocations involved allocations to more than one taxonomic classification.

Of potential value in improving the relationship between stated and inherent auditing course objectives at South

African universities would be the routine use of a classification system to monitor this relationship on a regular basis. For instance, every course examination, once set, could be analysed so as to compare the taxonomic character of its inherent objectives with the stated course objectives. A pre-requisite to this process would, of course, be the choice, by each university, of a classification system that enabled them to perform this analysis meaningfully. / Lec

Ideally, if all universities used the same classification system, there would be considerable potential for inter-university communication on course objectives. The facilitation of better communication among college examiners was indeed one of the stated purposes of Bloom's study (Bloom et al, 1956 p.4). The significance of such a development could well be in enabling the universities to monitor some form of common 'CTA' examination in the event of the Qualifying Examination being removed as a test of the universities' graduates.

An extensive study of the suitability of various classification systems for the analysis of university auditing course objectives could lead to a widely accepted classification system. From the experience of this study various systems could be comparatively tested on groups of

auditing academics so that, inter alia, a measure of usability (ie. ease of understandability by users), and suitability (ie. facility for meaningful analysis of auditing course objectives), was established. This could result in some degree of consensus among auditing academics on the use of such analysis generally, and on one system in particular.

X For conducting the inferential analysis of examination questions, the panel of judges method was used in this study because it was found to be the most suitable method available and had previously been used on several other studies involving Bloom's taxonomy. One of the people originally invited to join the panel, (an educational technologist), was not an auditing academic. It was soon evident that this person's lack of understanding of the subject matter imposed considerable limitations on his ability as a judge and he was invited to remain with the group as an advisor due to his extensive experience with the use of Bloom's taxonomy. He proved to be valuable in this capacity although his value would diminish in relation to increasing levels of experience with the taxonomy among the judges concerned. An understanding of the subject being analysed would, however, be a necessary qualification for panel judges. ✓

One problem, although solved for the purposes of this study, would be worth investigating further if regular use is to be made of taxonomic analysis. The basis for measuring stated and inherent course objectives was not readily comparable. While the measurement bases used in this study did provide comparable data its limitation was in not being able to draw inferences from the finer distinctions which arose.

It might be that the methods used to manipulate data into comparable form could be refined to the extent that finer comparisons are possible. Alternatively, the form in which the raw data is collected could be further explored.

A system of rating the inherent objectives of each examination question out of 10 appears to offer little opportunity in this regard. Consideration was given in this study to scoring stated objectives on the same basis as inherent objectives, that is apportionment over 100%. This did, however, raise the possibility of complicating the questionnaire to the extent that its data would be unusable.

There may, however, be prospects for the successful use of in-depth interviews with auditing academics rather than survey questionnaires. This method of data collection might better facilitate the apportionment of all stated course objectives over 100 percentage points in terms of their

relative importance. It could also enable the gathering of valuable data on students' prior learning experience in relation to each objective. Although the data would always be the product of subjective judgment it would at least have been gathered at source on the same measurement basis.

5. EDUCATIONAL AIMS

The inclusion of educational aims in the survey questionnaire used in this study was intended for the exploration of their possible relationships with course objectives. They were not an integral part of the design of this study, and ultimately offered no apparent contribution to the comparison of stated and inherent course objectives. On another level, an elaboration of this study's comparison of the course aims of the different universities with practitioners' preferred aims raises questions which could stimulate further enquiry.

The importance of aims (or goals) in course construction, Mager suggests, is that;

"It is possible to construct a course that nobody needs, either because the course is unrelated to the problem that gave rise to it or because it

"teaches" things the students already know. Techniques such as performance analysis and goal analysis can help avoid such wasteful practices." (1975, p.2)

✓
Broad
aims

Logical consistency between the aims and detailed objectives of a course would, particularly in the light of the above statement, be essential. The absence of such consistency could raise serious doubts as to the clarity of the course designer's understanding of the course which could well be manifest as poor communication to students.

✓

The five aims contained in the questionnaire (refer Table 7.1) present generalised expressions of possible justifications for the existence of auditing courses.

✓

Survey respondents were asked, as a prelude to the detailed questions on educational objectives, to rank five given auditing course aims. Aims and objectives were not constructively linked in the questionnaire design. It is suggested that there is potential for valuable study of this relationship with respect to auditing courses at South African universities.

Respondents were requested to rank the 5 aims in order of importance (with 1 high and 5 low). Mean scores for each group of respondents (universities and practitioners) were calculated and then inverted (ie. 5 minus mean score) to

reflect the most important aims as the highest quantitative scores. The 5 aims and their related (inverted mean) scores are reproduced in Table 7.1 while Figure 7.1 illustrates the respective scores for each of the two groups.

Aim (b), "To equip students with the conceptual knowledge to enable them to deal with auditing problems in a rapidly changing environment", was clearly prominent as the first choice of both university and practitioner respondents. For practitioners, aim (e), "Through the examination process, to act as a filtering mechanism to ensure that only students of 'acceptable quality' pass auditing", was clearly their least preferred choice. Given the apparent reliance practitioners place on university performance in employing graduate clerks, a higher ranking of this aim might have been expected from them. For some practitioners, however, it was important: it was the second-ranked choice of approximately 10% of all practitioner respondents.

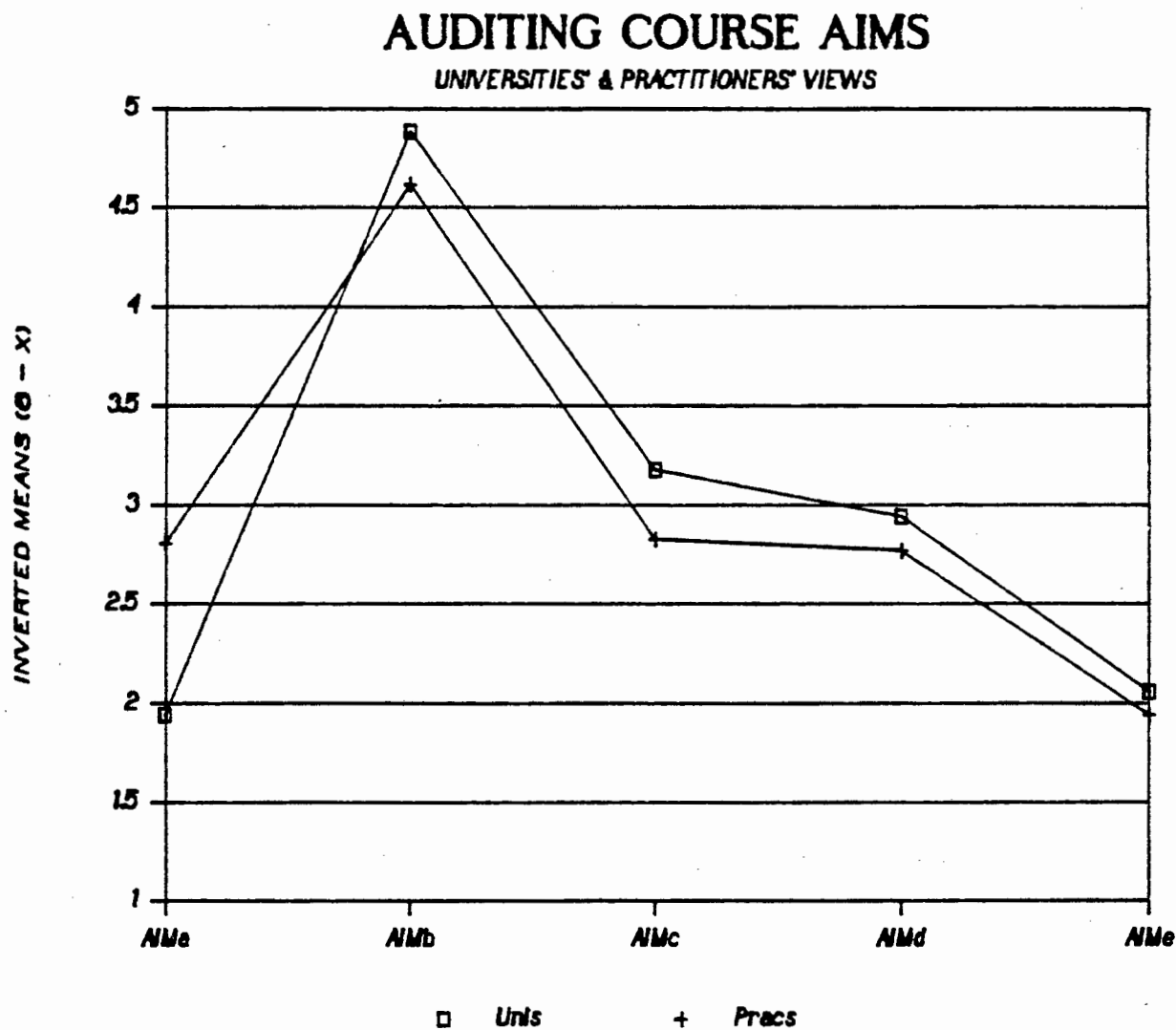
For university respondents, aim (a), "To prepare students to function competently as articulated clerks", was considered least important. Considering this in relation to the top ranking of aim (b), it would appear that universities are aiming at (or tending towards) conceptually- rather than practically-oriented auditing courses. Whether this is borne out by the reality of the actual courses and examinations of

Table 7.1AUDITING COURSE AIMS

*Importance expressed in mean scores
on the scale: 1 high, 5 low*

	<u>Uni-</u> <u>versities</u>	<u>Prac-</u> <u>titioners</u>
(b) To equip students with sufficient conceptual knowledge to enable them to deal with auditing problems in a rapidly changing environment	1.11	1.38
(c) To prepare students for the Qualifying Examination of the Public Accountants' and Auditors' Board	2.82	3.17
(d) To teach students how to learn auditing	3.05	3.23
(e) Through the examination process, to act as a filtering mechanism to ensure that only students of 'acceptable quality' pass auditing	3.94	4.05
(a) To prepare students to function competently as articled clerks	4.05	3.19

FIGURE 7.1

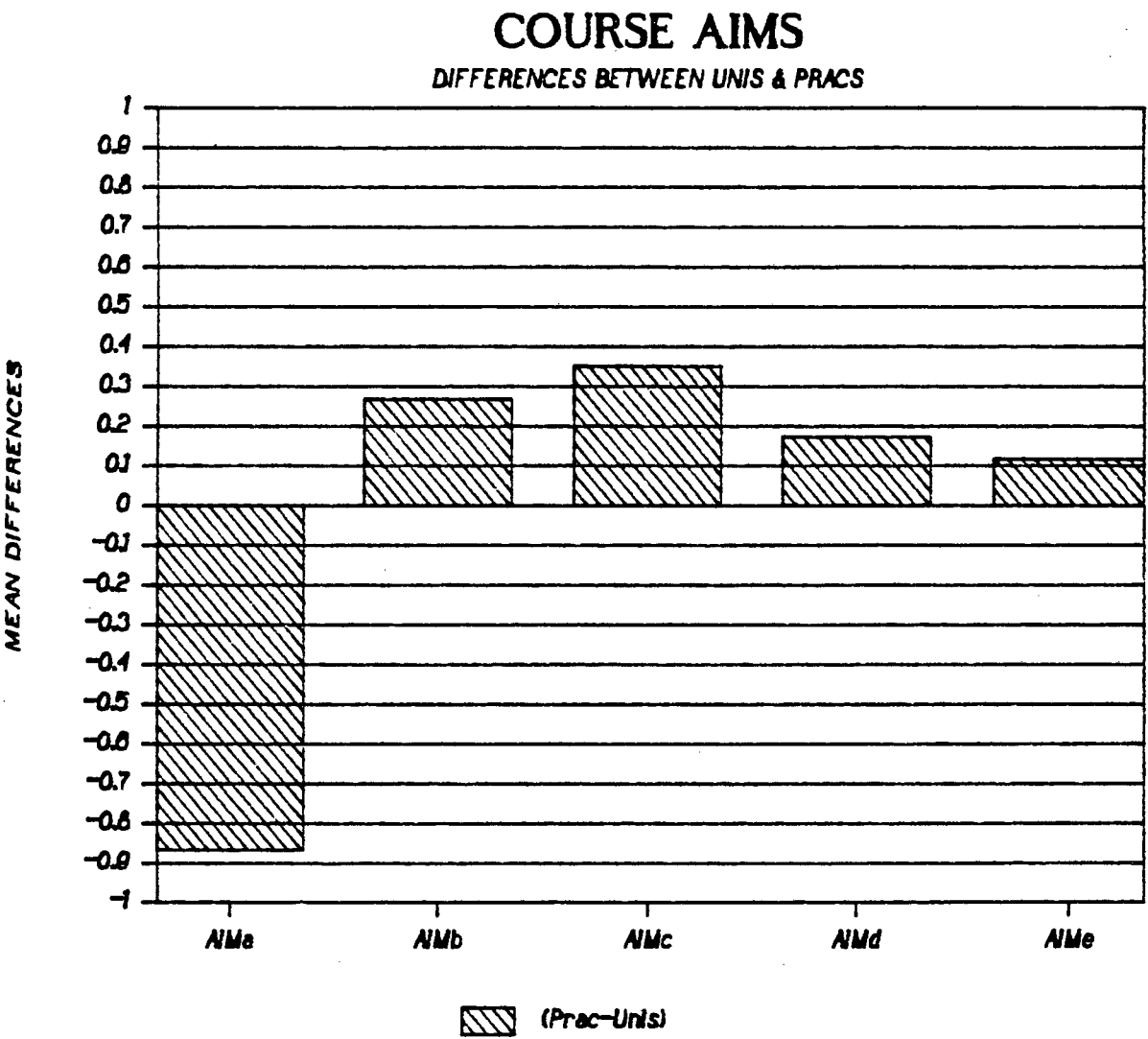


those universities is a question that should be investigated further.

The differences between the views of the two respondent groups are reflected as the mean scores of universities and practitioners and highlighted in Figure 7.2. The largest difference was on aim (a); "To prepare students to function competently as articled clerks" where there was a difference of 0.8 in the respective mean scores; more than twice as large as the next biggest difference. It is understandable that practitioners should be the more concerned with this issue, but it does, nevertheless, pose an interesting question for further investigation.

The second largest difference was on aim (c); "To prepare students for the qualifying examination". This difference (0.34 of mean scores) reflects a higher ranking by universities than practitioners. Given the established influence of the QE on universities, it is understandable that universities would be more concerned with this aim than practitioners.

FIGURE 7.2



6. EDUCATIONAL RELEVANCE OF COURSE OBJECTIVES

The issue of the educational 'relevance' of course objectives, and more specifically, of the different taxonomic classifications of those objectives, can be addressed in relation to the values inherent in the choices and preferences of university and practitioner respondents. Furthermore, other statements of objectives related to university auditing courses are available: the ERCOM report (1984) and Horizons for a Profession (Roy and MacNeill, 1967) are two that should not be overlooked. It is, therefore, germane to consider the relevance of universities' stated course objectives for auditing in terms of the consistency and extent of corroboration provided by other points of reference.

It should, however, be noted that these considerations exist within the broader context of the traditional academic role of influencing change and representing an educational viewpoint. The academic should, for example, be concerned with both the current and future relevance of education. This requires vision and the courage to confront those who exhibit a tendency to protect the status quo. Preoccupation with facts and techniques at the expense of an understanding of underlying theory could result in a largely evanescent

education. The interpretation of what to teach, and how to teach it in order to best equip students with relevant intellectual skills are matters that fall clearly in the academic's domain. Thus, all discussion of relevance and validity in this study should be seen within the context of this broad and vitally important discourse.

The question of what is, and what is not relevant to auditing education may best be discussed in terms of validity. Validity of objectives would be determined with reference to the extent of corroboration from alternative sources. The nature of this study also facilitates an examination of the 'internal consistency' of the stated objectives of the three universities subjected to inferential analysis. In the comparison of stated and inherent objectives, a basic reflection on the validity of a university's course objectives would be provided in the limited sense of raising a question as to whether stated or inherent objectives are the university's real course objectives.

Thus, if the universities' stated auditing course objectives could, in some way, be validated, they could be said to be relevant. There are a number of possible means of validating objectives.

In his study Wegman validates the learning objectives of the public accounting profession (in America) by judging their value with reference to a standard of appraisal (Wegman 1979, p.222). The standard of appraisal used by Wegman is Roy and MacNeill's *Horizons for a Profession* (1967), a work which has attained undoubted stature in the field of accounting education. Wegman argues that his choice of *Horizons* was, ".... nearly inevitable because comparable surrogates are not available. The simple existence of *Horizons* has probably precluded the development of alternatives." He refers also to the "authoritative and influential" position of their work (Wegman 1979, p.222).

In South Africa, the counterpart to *Horizons for a Profession* is the ERCOM report (1984) on Professional Subjects. It does not, however, share the authoritative and influential status of *Horizons*. It has not itself been validated by means of comparison with the inherent objectives of the Qualifying Examination (QE) for which it specifies objectives. However, in spite of this, it does present an auditing syllabus, taxonomically profiled, that has resulted from the combined deliberations of accounting professionals and academics. It is, therefore, not insignificant and would, so far as is possible, serve as an indirect source of validation due to the fact that it represents the syllabus for the QE. (For a summary of the

ERCOM auditing syllabus together with related objectives, refer to Appendix E.) The influence of the QE on university accounting courses has been discussed in an earlier chapter.

The most appropriate available source of external validation for universities' auditing course objectives would be practitioners' preferred objectives. They constitute responses to an almost identical questionnaire at the same time as universities responded.

A less obvious form of validation concerns the internal consistency of course objectives. That is, the relationship between stated and inherent course objectives. Logic would dictate that a set of stated course objectives could be seriously devalued or invalidated were the inherent course objectives significantly different.

Validation will be examined firstly, with reference to the views of auditing practitioners; secondly, for internal consistency with inherent objectives (in the case of the three universities subjected to inferential analysis); and, thirdly, by means of a comparison of the taxonomic profile (termed 'levels of knowledge') of the ERCOM objectives for auditing.

Universities exhibit a clear preference for educational objectives of the Application and Analysis classes. Practitioners share this preference, but not with the same degree of emphasis in the case of the Application class objectives. (Table 7.2 refers.) Universities have stated that they are least inclined towards the Knowledge and Comprehension class objectives. Synthesis and Evaluation are grouped in the middle of the scale by both university and practitioner respondents.

A remarkable feature of the taxonomic profile of universities' stated objectives is their congruence with the preferences of auditing practitioners. The only statistically significant difference arose on Application class objectives. Within the apparent pairing of the six classes there are negligible differences between the views of the two groups.

It could be said, therefore, that auditing practitioners have provided a considerable degree of external validation of the universities' stated objectives, with one reservation regarding Application-type objectives. This difference is not fundamental. Practitioners have clearly rated it as their second choice so that the validity of the universities' Application-type objectives as first choice may be subject to some question.

Table 7.2

**MEAN SCORES ON TAXONOMIC GROUPINGS
OF STATED EDUCATIONAL OBJECTIVES**

<u>TAXONOMIC CLASS</u>	<u>MEAN SCORE</u>		<u>RANK</u>	
	<u>Unis</u>	<u>Pracs</u>	<u>Unis</u>	<u>Pracs</u>
APPLICATION	8.9	7.8	1	2
ANALYSIS	8.8	8.5	2	1
SYNTHESIS	7.4	7.4	3	3
EVALUATION	7.2	7.3	4	4
KNOWLEDGE	6.7	6.6	5	6
COMPREHENSION	6.4	6.7	6	5

For the three universities subjected to inferential analysis, the question of internal validity can be addressed. The taxonomic profile of inherent objectives is presented in Table 7.3.

While the comparison of stated and inherent objectives has been carried out in detail in Chapter 6, the summarised results and comparison presented in Table 7.3 do raise obvious questions regarding the reliability of at least three of the universities' stated course objectives. Knowledge and Analysis-type objectives would appear to have been respectively over- and under-examined by the three universities concerned. Thus, although the combined stated objectives of the 16 universities are to provide the basis for further discussion, the potential lack of internal consistency of stated objectives in representing the inherent objectives of a course raises a question concerning their validity. It would seem that careful self-examination by each university would be necessary to resolve such internal inconsistencies. Earlier recommendations regarding approaches to the formulation of objectives (ie. inductive or deductive) have addressed this issue.

In the study by ERCOM (1984, p.13), a hybrid 'levels of knowledge' model was developed. Bloom's taxonomy was a major

Table 7.3

**TAXONOMIC PROFILE OF INHERENT COURSE OBJECTIVES
FOR UNIVERSITIES A, B AND C COMBINED**

<u>TAXONOMIC CLASS</u>	<u>PERCENTAGE OF THE EXAMINATION</u>	<u>STATED OBJECTIVE RANKING</u>
APPLICATION	43%	1
KNOWLEDGE	24	5
EVALUATION	17	4
COMPREHENSION	6	6
SYNTHESIS	6	3
ANALYSIS	4	2

component of this model so that there are similarities between them. Table 7.4 sets out the equivalent 'levels' of the two models.

The ERCOM model includes a fourth element in its level 3; namely 'interpretation'. This model also attempts to distinguish levels 2 and 3 as requiring convergent and divergent application of knowledge respectively. In this respect Bloom's taxonomy is different. Application in the taxonomy does not distinguish between convergent and divergent thinking. The predominant criteria would be the use of abstractions in particular situations. The divergent application of knowledge would therefore either be classified as Application or Synthesis (where, for example, creative thinking was involved) according to Bloom's taxonomy.

Another distinction made by the levels of knowledge model is between Application and Integration. The former normally involves only one ideal solution which is logically determined from the information given. Integration on the other hand, may involve the application of multi-disciplinary knowledge and more than a single acceptable solution (ERCOM, 1984, p.14). Thus some of the more complex Application-type problems according to the taxonomy could be

Table 7.4

**COMPARISON OF BLOOM'S TAXONOMY
WITH ERCOM'S LEVELS OF KNOWLEDGE MODEL**

<u>ERCOM'S LEVELS OF KNOWLEDGE</u>	<u>BLOOM'S EQUIVALENT TAXONOMIC CLASS</u>
1. Knowledge & Comprehension	1. Knowledge 2. Comprehension
2. Application	3. Application
3. Integration	4. Analysis 5. Synthesis 6. Evaluation

classified as Integration according to the levels of knowledge model.

Thus while there are similarities between the two models their differences unfortunately rule out direct comparisons. Furthermore, although there is a strong influence exerted on university courses (particularly final year courses) by the ERCOM syllabi (through the Qualifying Examination), they are ostensibly set for the Qualifying Examination and not the universities. However, in spite of this, the levels of knowledge profile of the ERCOM should be examined in relation to universities stated course objectives as the former does constitute part of the latter's frame of reference.

A simple analysis of the ERCOM levels of knowledge emphasis is based on the number of detailed topics falling under each level. These are summarised by topic area in Table 7.5.

A comparison of the above results with the taxonomic profile of stated objectives indicates a similarly low rating of Knowledge and Comprehension in each case. However, no further comparison would be meaningful due to the cross-sectioning of the taxonomy's Application classification by the above levels of knowledge model.

Table 7.5

**ERCOM'S EMPHASIS ON EACH LEVEL
OF KNOWLEDGE BASED ON TOPIC COUNTS**

<u>TOPIC AREA</u>	<u>LEVEL OF KNOWLEDGE</u>		
	<u>1</u>	<u>2</u>	<u>3</u>
1 The Audit	6	5	27
2 The Auditor	4	1	12
3 The profession	10	2	0
4 Systems & controls	1	6	24
5 The audit process	4	5	54
6 Sampling	0	9	9
7 Company law	0	3	27
8 Audit of EDP systems	<u>1</u>	<u>18</u>	<u>11</u>
TOTALS	<u>26</u>	<u>49</u>	<u>164</u>
% OF TOTAL	11%	21%	68%

The influence of the QE on university auditing (and other) courses has already been argued. Thus, on pragmatic grounds at least, (as opposed to the matter of educational philosophy), the QE can not be ignored as one source of validation for universities' stated course objectives. It is recommended, therefore, that an inferential analysis of the QE (in its present form) be undertaken on an ongoing basis as a reference to the relevance of university course objectives.

Roy and MacNeill (1967) use three basic divisions of 'knowledge' to distinguish between their objectives; that is, 'Fair', 'Good' and 'Thorough'. Wegman (1979) has related the Gagne/Briggs model (1979) to Roy and MacNeill's three levels as a result of having conducted an inferential analysis of the uniform Certified Public Accountants examination of the AICPA. Validation in terms of both the ERCOM report and Horizons for a Profession are not feasible due to differences between the models used to classify objectives. To facilitate such comparisons inferential analyses of the QE and uniform CPA examination in terms of Bloom's taxonomy would be necessary.

While the stated auditing course objectives of South African universities are clearly validated by the views of auditing practitioners, the issue of internal consistency between

stated and inherent objectives of the three universities subjected to inferential analysis threatens the validity of stated objectives. This underlines the need for universities to undertake, as a matter of course, the careful examination of the relationship between their stated and inherent course objectives. The question of relevance could not, therefore, begin to be answered without each university first having examined this relationship.

7. THE QUALIFYING EXAMINATION

It has already been recommended that an ongoing taxonomic analysis of the QE would enable universities to examine one aspect of the relevance of their auditing (and other) course objectives.

It should also be recognized, however, that were there a lack of internal consistency between the stated objectives of the QE (per the ERCOM report) and the inherent objectives of the QE, considerable doubt might be cast on the QE as a source of validation of universities' course objectives. Such inferential analysis would have to be carried out using

the levels of knowledge model used in the ERCOM syllabi in order to facilitate matching.

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CHAPTER 8

CONCLUSION

The aims of this study were twofold: to investigate the nature of, and relationships between, educational objectives as stated and those inherent in related examinations questions for auditing courses at South African universities.

Eight objectives established the working detail to these aims. The first four objectives were aimed at the investigation of the nature of educational objectives for auditing courses at South African universities. The relationships between stated and inherent objectives were addressed by objectives 5, 6 and 7 while objective 8, concerned with discussing implications and putting forward recommendations, was the corollary to the preceding objectives.

The focal point of this study was, however, the relationship between stated and inherent objectives for auditing courses at South African universities with the primary objective of investigating the congruency of this relationship and considering its implications for auditing education. The conclusion reached on this issue is that there are indications of prominent mismatches between the two sets of objectives of two out of the three universities subjected to inferential analysis.

The implications of such mismatching for auditing education are potentially serious in terms of the detrimental influence on the effectiveness of the learning experience and the possibility of misleading students. Although this study was contextual in that no generalised statistical projections were made regarding the situation at the fourteen South African universities not subjected to inferential analysis, the evidence arising from it does suggest that it would be imprudent to ignore the possibility of similar mismatches at these universities. A number of recommendations flow from this.

All the universities should themselves regularly monitor the matching between stated and inherent course objectives. This could be achieved in various ways, the most obvious being through re-performance of the procedures employed in this study.

A recommendation which could substitute for, but which should ideally supplement, the above, is that an inductive (rather than a deductive) approach to setting stated course objectives be adopted. Basically, the inductive approach would involve determining inherent course objectives through the inferential analysis of past examination papers. This would provide a sound starting point for the formulation of stated course objectives each year and is possible because

of the inhibiting influence of the Qualifying Examination on significant changes to auditing course objectives.

A further recommendation regarding the matching of stated and inherent course objectives concerns the setting of examination questions. Due to the typical situational case-study-type questions in auditing, setting an examination question in terms of particular stated objectives (and their taxonomic character) is not easily achieved as there are invariably other factors which may influence the taxonomic character of a question. In setting an auditing question on a particular topic the process of creating a realistic problem may well result in a question with a different taxonomic character to that originally intended. This usually occurs because the creation of a realistic problem scenario can take its own course without reference to taxonomic class. Thus it is likely to be more effective to select a set of examination questions from a pool of questions specifically to meet the stated objectives of a course. This procedure is similar to that employed by the Education Committee of the PAAB in setting the Qualifying Examination.

It was concluded that, in the academic year concerned, students of Universities A and B who may have relied on stated course objectives for guidance, would have been

seriously misled. The extent to which these two universities had clearly articulated their auditing course objectives was not established. It is possible, however, that due to the serious mismatching which occurred, students may have been generally better off had there been no clearly articulated stated objectives available, or, if they were available, had they not referred to such objectives.

The issue of relevance and validity of the universities' auditing course objectives was addressed. Three different aspects of validity were explored.

Firstly, the views of the auditing profession were an important point of reference due to the fact that, as individuals, they represented different vintages of past students; as firms they represented the major employers of the universities' accounting graduates; and they were responding to the same set of questions used to establish the universities' stated auditing course objectives.

Secondly, an attempt was made to relate the taxonomic emphasis of the universities' auditing course objectives to those of the Educational Requirements Committee of the PAAB.

Thirdly, the issue of internal consistency had to be addressed. There could be little educational value attached

to validating a university's stated objectives with reference to one or more external sources when there was poor matching between its stated and inherent objectives.

Validation with reference to the views of the auditing profession was strongly indicated. Only on Application-class objectives was there a statistically significant difference between the universities' stated objectives and those preferred by the profession. Further analysis revealed that this difference was predominantly attributable to only two of the six objectives of the Application-class.

The attempt to validate the universities' stated objectives with reference to ERCOM's objectives for the QE proved impossible due to the different bases of classifying objectives. While Bloom's taxonomy of educational objectives was used in this study, the ERCOM study made use of a hybrid model which, although based largely on Bloom's taxonomy, was not sufficiently similar to enable any meaningful comparison.

The validation of course objectives with reference to the internal consistency between the stated and inherent objectives of each university was discussed in terms of the mismatching between these sets of objectives in the case of the three universities subjected to inferential analysis.

Thus, while a university might claim to have valid objectives to the extent to which they are congruent with the views of the profession, this would be negated where its stated and inherent objectives were mismatched, as was the case with Universities A and B.

An important rider to the issue of validity is academic influence; what is considered educationally desirable. To what extent are academics concerned with issues such as the current and future relevance of a course and consequently the dangers of an evanescent education? Is there a preoccupation with technique and neglect of theory? These issues form part of a debate of vital importance. The three considerations of validity raised originally should, therefore, be seen within the context of a much broader discourse not entered into here.

The experience of classifying auditing course objectives has provided some valuable lessons. The search for a classification model has served to add some clarity to the available options. In proving itself viable as a basis for classifying objectives for auditing courses at South African universities, Bloom's taxonomy also revealed some of its limitations.

It is not truly hierarchical. It does not deal with 'imaginative understanding' and ERCOM found the need to distinguish between 'convergent' and 'divergent' application which was not distinguished in Bloom's taxonomy. Yet it has been widely used during the thirty odd years of its existence. There is a suggestion that higher levels of perfect agreement among judges classifying inherent objectives could improve with increased practice at applying it to the subject matter concerned.

The different bases used to measure stated and inherent objectives posed some difficulty when the two were compared. None of the alternative methods appeared to offer less difficulty. However, were a similar study undertaken, the possibility of requesting respondents to apportion 100 percentage points among the available stated objectives might offer some advantage, particularly if the only respondents involved were the eighteen South African universities.

A final recommendation concerns the Qualifying Examination of the PAAB. The publication of ERCOM's first report on the educational requirements for Chartered Accountants in South Africa in 1984 has created an important opportunity to monitor the matching of the stated and inherent objectives of the QE. Any such analysis would have to make use of the

hybrid classification system developed by ERCOM. This would facilitate its validity as a classification model, but more importantly, such analysis would provide an invaluable indication to students and the universities alike as to the real objectives of the QE.

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15 August 1983

TEACHING OBJECTIVES FOR AUDITING

This survey is part of a masters thesis aimed at identifying and evaluating the teaching objectives for auditing courses taught at South African universities.

Clearly, this cannot be done without the views of practitioners and it is for this reason that approximately 15 minutes of your time is required to complete the attached questionnaire.

The results of this survey will provide:

1. The basis for evaluating universitys' teaching objectives for auditing in the light of professional requirements.
2. An indication of the collective views of practitioners on teaching objectives for auditing courses at universities.
3. Universities with information to enable them to review their teaching objectives for auditing courses.

Could you kindly complete the attached questionnaire by 12 September 1983 and return it in the attached reply-paid envelope.

Thank you for your co-operation.

Yours sincerely

PETE SMITH
Senior Lecturer

EXPLANATORY NOTE

The survey questionnaire (pages A3 to A5), has been reproduced in a form altered to avoid unnecessary duplication of the major portion of the questionnaire.

Page A3 illustrates the first page of each of the questionnaires to universities and practitioners respectively. Page 2 of the questionnaire to universities is reproduced on the left hand side of page A4. On the right hand side of this page is the comparable opening paragraph to Part II of the questionnaire to practitioners. At the foot of page A4, Part I of the questionnaire contains slightly different introductory wording from that of universities.

The remainder of the questionnaire, reproduced on page A5, is identical for both universities and practitioners.

In general, universities were asked to state what their auditing course aims and objectives were, while practitioners were asked for their views on what they thought a universities aims and objectives should be.

QUESTIONNAIRE ON AUDITING COURSES
AT SOUTH AFRICAN UNIVERSITIES

**TO
UNIVERSITIES**

The objective of this questionnaire is to identify the 'teaching' aims and objectives of Auditing courses taught at South African Universities.

For the purposes of completing this questionnaire, all auditing courses (up to CTA or equivalent) taught at a University should be regarded as one course. Thus the teaching aims and objectives should relate to what auditing students have achieved by the time they successfully complete their university studies (CTA or equivalent). The teaching aims and objectives given should be related to your University's stated or implied aims and objectives.

This questionnaire should take approximately 15 minutes to complete.

The anonymity of persons and universities is assured.

UNIVERSITY (optional)

DATE

Would you like a copy of the results of this survey

YES	NO
-----	----

PART I

AIMS OF AUDITING COURSES

Please rank the following AIMS in order of importance, from 1 high to 5 low

The overall AIMS of this University's auditing courses are:

- (a) To prepare students to function competently as articulated clerks
- (b) To equip students with sufficient conceptual knowledge to enable them to deal with auditing problems in a rapidly changing environment.
- (c) To prepare students for the Qualifying Examination of the Public Accountants' and Auditors' Board.
- (d) To teach students how to learn auditing.
- (e) Through the examination process, to act as a filtering mechanism to ensure that only students of 'acceptable quality' pass auditing.

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Other (please state)
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QUESTIONNAIRE ON AUDITING COURSES
AT SOUTH AFRICAN UNIVERSITIES

**TO
PRACTITIONERS**

The objective of this questionnaire is to obtain your views on the desired 'teaching' aims and objectives for auditing courses taught at South African Universities.

For the purposes of completing this questionnaire, all auditing courses (up to C.T.A. or equivalent) taught at a University should be regarded as one 'course'. Thus, the 'teaching' aims and objectives should relate to what auditing students should have achieved by the time they complete their University studies (C.T.A. or equivalent). Your answers should reflect what you consider to be the most desirable or important teaching aims and objectives.

This questionnaire should take approximately 15 ^{minutes} to complete.

The anonymity of persons or firms is assured.

Kindly return this questionnaire by 12 September 1983 in the attached reply-paid envelope.

PERSONAL DATA

Your name (optional):

Firm (optional):

City/Town: (tick box)

Your age-group	under 25	<input type="checkbox"/>
	25 - 35	<input type="checkbox"/>
	36 - 45	<input type="checkbox"/>
	46 - 55	<input type="checkbox"/>
	over 55	<input type="checkbox"/>

Size of firm (Practitioners only)	Total number of partners and employees (local office only)
	under 10 people
	11 to 50 people
	51 to 100 people
	over 100 people

Would you like a copy of the results of this survey?
(If so, ensure that your name and address is included.)

YES	NO
-----	----

PART II

TO UNIVERSITIES

TEACHING OBJECTIVES

A selection of teaching objectives are listed under each of 10 main Auditing topics.

Please RATE each of these objectives in terms of how representative it is of the stated or implied teaching objectives of your University's Auditing courses (with 10 as highly 'representative' and 1 as completely 'unrepresentative'). Bear in mind that the teaching objectives should be related to what your students should be able to do in order to successfully complete their university studies (CTA or equivalent).

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1. Auditing - Background
(Including: History; Development; Structure of the Profession; etc.)

Objectives: On completion of their studies students should be able to:-

- (a) Converse and write intelligently on the history, development and professional structure of auditing.
- (b) Explain aspects of the present state of auditing with reference to its historical background.
- (c) Recall facts and events about auditing referred to in lectures or reading assignments.
- (d) Express a personal opinion as to what is considered positive or negative regarding these background topics.

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2. Ethics and Rules
(Including: SAICA statements on professional conduct, e.g. 3.001, 3.101, 3.102; Disciplinary rules; Rules of professional conduct; Confidentiality; etc)

Objectives:

- (a) (Given a hypothetical situation) criticise the ethical behaviour of a practising accountant.
- (b) Recall pronouncements and rules.
- (c) Demonstrate an ability to critically evaluate the system of ethical pronouncements and rules.
- (d) Explain the concept of ethics and the reason for any pronouncement or rule.

☐
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☐

TO PRACTITIONERS

PART II

TEACHING OBJECTIVES

A selection of teaching objectives are listed under each of 10 main Auditing topics.

Please RATE (i.e. score out of ten) each of these objectives in terms of how well it represents what you think the Universities teaching objectives for auditing courses should be. (With 10 as highly 'representative' and 1 as completely 'unrepresentative'.) Thus, if any of the given objectives represents your views on university teaching objectives it should score high and vice versa. Bear in mind that teaching objectives relate to what auditing students should be able to do as a result of their university studies. Thus, for the purposes of answering this questionnaire, you should ignore the issue of practical experience or training under articles.

PART I

AIMS OF AUDITING COURSES

Please rank the following AIMS in order of importance, from 1 high to 5 low

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tance

The overall AIMS of a University's auditing courses should be:

- (a) To prepare students to function competently as articulated clerks
- (b) To equip students with sufficient conceptual knowledge to enable them to deal with auditing problems in a rapidly changing environment.
- (c) To prepare students for the Qualifying Examination of the Public Accountants' and Auditors' Board.
- (d) To teach students how to learn auditing.
- (e) Through the examination process, to act as a filtering mechanism to ensure that only students of 'acceptable quality' pass auditing.

☐
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Other (please state)
.....
.....
.....

3. Accounting Systems and Internal Control
(Including: Principles and procedures of sound systems for any business entity.)

Objectives:

- (a) Recall the principles applicable to any system of accounting and control. ☐
- (b) (Given basic specifications) design a sound system of accounting and control. ☐
- (c) (Given a systems description) recommend improvements to the system. ☐

4. The Audit Process - Planning

Objectives:

- (a) (Given hypothetical details of a client company) plan an audit. ☐
- (b) Cite the reasons for audit planning. ☐
- (c) (Given the actions of an auditor) evaluate the audit planning carried out. ☐

5. The Audit Process - Systems Evaluation

(Including: The principles and procedures involved in the auditor's evaluation of accounting and control systems, namely, enquiry, review, recording, evaluation and compliance testing.)

Objectives:

- (a) Describe how an auditor would evaluate any system. ☐
- (b) (Given a systems description) identify strengths and weaknesses in the system. ☐
- (c) (Given strengths and weaknesses in a system) design appropriate compliance tests. ☐

6. The Audit Process - Substantive Testing

(Including: Testing of transactions and balances or vouching and verification, and analytical review.)

Objectives:

- (a) (Given a description of audit tests carried out) decide whether GAAS has been complied with. ☐
- (b) Recall the general principles of audit testing. ☐
- (c) (Given details of a client company) design appropriate audit tests. ☐

7. The Audit Process - Reporting

Objectives:

- (a) Draft an audit report from memory. ☐
- (b) (Given relevant information on audit conclusions) decide what type of audit opinion to express, if any, and to draft a suitable report. ☐
- (c) Recall the guidelines (Stmts 3.301 & 3.302) for issuing a qualified audit report. ☐

8. Legal Aspects

(Including: Relevant sections of the Companies Act and the Public Accountants' & Auditors' Act)

Objectives:

- (a) Recall sections of statutes included in the course. ☐
- (b) Solve hypothetical legal problems with reference to the relevant statutes. ☐
- (c) Explain the principles or logic of important sections of statute. ☐

9. Computer Auditing

Objectives:

- (a) Identify control strengths and weaknesses in a given computerised accounting system. ☐
- (b) Recall the principles applicable to any computerised system of accounting and control. ☐
- (c) (Given basic specifications) design a sound computerised system of accounting and control. ☐
- (d) (Given details of a client company) design appropriate audit tests; including computer assisted techniques, if necessary. ☐
- (e) Recall the general principles of computer auditing. ☐

10. Specialised Topics*

(Such as: Statistical sampling; Quality control; Post balance sheet events; Materiality; Going concern; Internal auditing; Unlawful acts by clients; Investigations; Prospectuses; Mergers & acquisitions; Reliance on other auditors; Prima facie insolvency; Risk; etc.)

Objectives:

- (a) Explain the principles underlying these topics. ☐
- (b) Apply principles and procedures in solving typical auditing problems on these topics. ☐
- (c) Apply principles and procedures in solving unique (new to the student) auditing problems on these topics. ☐

* (Delete those topics to which your answers do not relate.)

(Thank you for your co-operation.)

SURVEY QUESTIONNAIRE : SUMMARY OF RESPONSES

MEAN SCORES TAXONOMIC
UNIS PRACS CLASS

1. AUDITING - BACKGROUND

(Including: History; Development; Structure of the Profession; etc.)

1(a) Converse and write intelligently on the history, development and professional structure of auditing.	4.6	4.5	SYNTH
1(b) Explain aspects of the present state of auditing with reference to its historical background.	4.3	4.6	COMP
1(c) Recall facts and events about auditing referred to in lectures or reading assignments.	3.9	4.7	KNOW
1(d) Express a personal opinion as to what is considered positive or negative regarding these background topics.	4.6	6.0	EVAL

2. ETHICS & RULES

(Including: SAICA statements on professional conduct. (3.001, 3.101, 3.102); Disciplinary rules; Rules of professional conduct; Confidentiality; etc)

2(a) (Given a hypothetical situation) criticise the ethical behaviour of a practising accountant.	8.9	5.9	APPLY
2(b) Recall pronouncements and rules.	6.7	6.0	KNOW
2(c) Demonstrate an ability to critically evaluate the system of ethical pronouncements and rules.	6.2	6.8	EVAL
2(d) Explain the concept of ethics and the reason for any pronouncement or rule.	7.1	7.4	COMP

3. ACCOUNTING SYSTEMS & INTERNAL CONTROLS

(Including: Principles and procedures of sound systems for any business entity.)

3(a) Recall the principles applicable to any system of accounting and controls.	7.1	8.0	KNOW
3(b) (Given basic specifications) design a sound system of accounting and controls.	9.4	8.8	SYNTH
3(c) (Given a systems description) recommend improvements to the system.	9.7	9.1	ANAL

4. AUDIT PROCESS - PLANNING

4(a) (Given hypothetical details of a client company) plan an audit.	8.7	8.7	SYNTH
4(b) Cite the reasons for audit planning.	8.2	7.4	KNOW
4(c) (Given the actions of an auditor) evaluate the audit planning carried out.	8.0	8.2	ANAL

5. AUDIT PROCESS - SYSTEMS EVALUATION

(Including: The principles and procedures involved in the auditor's evaluation of accounting and control systems, namely, enquiry, review, recording, evaluation and compliance testing.)

5(a) Describe how an auditor would evaluate any system.	8.5	7.8	KNOW
5(b) (Given a systems description) identify strengths and weaknesses in the system.	9.4	9.3	ANAL
5(c) (Given strengths and weaknesses in a system) design appropriate compliance tests.	9.3	8.7	APPLY

SURVEY QUESTIONNAIRE : SUMMARY OF RESPONSES

MEAN SCORES TAXONOMIC
UNIS PRACS CLASS

6. AUDIT PROCESS - SUBSTANTIVE TESTING

(Including: Testing of transactions and balances or vouching and verification, and analytical review.)

6(a) (Given a description of audit tests carried out) decide whether GAAS has been complied with.	8.5	8.0	EVAL
6(b) Recall the general principles of audit testing.	7.2	7.6	KNOW
6(c) (Given details of a client company) design appropriate audit tests.	9.3	8.9	APPLY

7. AUDIT PROCESS - REPORTING

7(a) Draft an audit report from memory.	5.4	3.7	KNOW
7(b) (Given relevant information on audit conclusions) decide what type of audit opinion to express, if any, and to draft a suitable report.	9.3	8.5	EVAL
7(c) Recall the guidelines (Stmts 3.301 & 3.302) for issuing a qualified audit report.	7.4	6.9	KNOW

8. LEGAL ASPECTS

(Including: Relevant sections of the Companies Act and the Public Accountants' and Auditors' Act)

8(a) Recall sections of statutes included in the course.	5.6	5.6	KNOW
8(b) Solve hypothetical legal problems with reference to the relevant statutes.	8.7	7.2	APPLY
8(c) Explain the principles or logic of important sections of statute.	6.6	7.7	COMP

9. COMPUTER AUDITING

9(a) Identify control strengths and weaknesses in a given computerised accounting system.	9.1	8.9	ANAL
9(b) Recall the principles applicable to any computerised system of accounting and control.	7.1	7.5	KNOW
9(c) (Given basic specifications) design a sound computerised system of accounting and control.	6.9	7.5	SYNTH
9(d) (Given details of a client company) design appropriate audit tests; including computer assisted techniques, if necessary.	8.5	8.2	APPLY
9(e) Recall the general principles of computer auditing.	6.7	7.5	KNOW

10. SPECIALISED TOPICS

(Such as: Statistical sampling; Quality control; Post balance sheet events; Materiality; Going concern; Internal auditing; Unlawful acts; Investigations; Prospectuses; Mergers & acquisitions; Reliance on other auditors; Prima facie insolvency; Risk; etc.)

10(a) Explain the principles underlying these topics.	7.6	7.3	COMP
10(b) Apply principles and procedures in solving typical auditing problems on these topics.	8.5	7.8	APPLY
10(c) Apply these principles and procedures in solving unique (new to the student) auditing problems on these topics.	8.0	7.2	ANAL

SUMMARY OF BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

1 KNOWLEDGE

Involves the recall or bringing to mind of specifics and universals, methods and processes, patterns, structures or settings. If one thinks of the mind as a file, the problem in a knowledge test situation is finding the appropriate signals, cues and clues which will most effectively bring out whatever knowledge is filed.

1.1 Knowledge of Specifics

The recall of specific bits of information, including knowledge of terminology and specific facts.

Eg: Familiarity with a large number of words in their common range of meanings and dates, events, persons, places etc.

1.2 Knowledge of ways and means of dealing with Specifics

Ways of organising, studying, judging and criticising. It does not so much demand the activity of the student in using the materials as it does a more passive awareness of their nature. Includes knowledge of conventions, trends and sequences, classifications and categories, criteria and methodology.

1.3 Knowledge of the Universals and Abstractions in a field

Knowledge of the major schemes and patterns by which phenomena and ideas are organised. Includes knowledge of principles and generalisations, theories and structures.
Eg: Knowledge of a relatively complete formulation of the theory of evolution.

2 COMPREHENSION

This represents the lowest level of understanding. The individual knows what is being communicated and can make use of the material without necessarily relating it to other material or seeing its fullest implications.

2.1 Translation

Eg: Skill in translating mathematical verbal material into symbolic statements and vice versa.

2.2 Interpretation

Eg: The ability to grasp the thought of the work as a whole at any desired level of generality.

2.3 Extrapolation

Eg: The ability to deal with the conclusions of a work in terms of the immediate inference made from the explicit statements.

3 APPLICATION

The use of abstractions in particular situations. The abstractions may be in the form of general ideas, rules, procedures or, they may be technical principles, ideas and theories which must be remembered and applied.

4 ANALYSIS

The breakdown of a communication into its constituent elements so that the relative hierarchy of ideas is made clear and/or the relations between ideas are made explicit.

4.1 Analysis of Elements

Identification of the elements included in a communication.

4.2 Analysis of Relationships

The connections and interactions between elements and parts of a communication.

4.3 Analysis of Organisational Principles

The organisation, systematic arrangement, and structure which hold the communication together.

5 SYNTHESIS

Putting together of elements and parts so as to form a whole. This involves working with pieces, parts, elements, etc., and arranging and combining them to constitute a structure or pattern not clearly there before.

6 EVALUATION

Quantitative and qualitative judgements about the extent to which material and methods satisfy criteria.

6.1 Judgements in terms of Internal Evidence

Eg: The ability to indicate logical fallacies in arguments.

6.2 Judgements in terms of External Criteria

Eg: Judging the excellence of a work in relation to other works in the same field.

Memorandum

10 May 1984

TO

PETE SMITH

THE GREAT TAXONOMIC DEBATE

Thanks for agreeing to participate. You have committed yourself to between 2 and 3 hours of involvement.

Enclosed please find one taxonomic toolkit comprising:

- (1) A summary of Bloom's Taxonomy which explains the 6 classifications.
- (2) Copies of auditing examination questions from 4 mystery universities for classification.
- (3) A form on which to record your classifications.

Procedure:

- (1) If necessary, familiarise yourself with the summary of Bloom's taxonomic classifications.
- (2) For each of the attached examination questions choose the applicable taxonomic classification. To do this enter 100% in the relevant column on the form provided.
- (3) You may find that a particular question falls under more than one classification heading. In such cases spread the 100% so as to reflect the relative applicability of each classification.
- (4) In some cases the higher levels of the taxonomy include lower levels. For example, a certain degree of 'knowledge' and 'comprehension' is often an inherent part of 'evaluation' type questions. In such cases the question should be classified under the higher level.
- (5) A meeting will be held on Tuesday, 5 June 1984 from 2-3 p.m. in Robert Leslie 4.12, (U.C.T.) for the purpose of reaching general consensus on classifications.
- (6) Should it prove necessary, a further meeting will be held on Tuesday, 12 June 1984 from 12-1 p.m. in Robert Leslie 4.12, (U.C.T.) in order to complete the process.

INFERENCEAL ANALYSIS OF EXAMINATION PAPERS

SUMMARY OF RESULTS

University A

Paper 1			% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL	
1/1	Special	3			5.0				
/2	Substantive	3	1.0		4.0				
/3	Substantive	20			1.3				3.8
/4	Substantive	7	2.0		3.0				
/5	Substantive	13	1.0		1.5	0.5	1.0		1.0
2/1	Legal	3	5.0						
/2	Legal	3	5.0						
/3	Reporting	7	0.5		3.5		1.0		
3/1	Legal	3	1.3	0.5	0.7				2.5
/2	Legal	5	3.5	1.0	0.5				
/3	Legal	3	3.0		2.0				
/4	Legal	2	1.0	1.0	1.0				2.0
/5	Legal	2	4.0		1.0				
4/a	Compliance	5			1.0	2.0			2.0
4/b	Substantive	8	0.5		4.5				
5/1	Substantive	1.5	2.0	1.0	2.0				
/2	Substantive	1.5	2.0	1.0	2.0				
/3	Substantive	1.5	1.0		3.0				1.0
/4	Compliance	1.5			3.0				2.0
/5	Controls	1.5	2.0	1.0	2.0				
/6	Controls	1.5	1.0	1.0	2.0				1.0
/7	Controls	2	1.0	1.0	3.0				
/8	Substantive	2	0.5	1.0	2.5				1.0
TOTALS (%)			100	24.6	3.7	40.9	3.3	4.0	23.5

University A

Paper 2			% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL	
1	Legal	12	0.5		3.5		0.4		0.6
2/a	Legal	7	0.4	1.0	1.5				2.1
/b	Reporting	8	1.0		3.0				1.0
3/a-d	Ethics/Reporting	17	1.0	0.3	3.0				0.7
/e	Substantive	6	2.0		3.0				
4/a	Legal	8	1.5	1.0			0.5		2.0
/b	Reporting	7	1.5		2.0		1.5		
5/a	Legal	5	2.5	0.5	1.0		1.0		
/b	Legal	2	0.5	0.5	1.0				3.0
6	Legal	5	3.5		1.5				
7/1	Compliance	4			1.5	1.0			2.5
/2	Controls	11	2.0		2.5		0.5		
8/1	Computers	3	4.0			1.0			
/2	Computers	5		1.0	3.5	0.5			
TOTALS (%)			100	26.7	5.7	45.0	1.9	6.0	14.8
PAPERS 1 & 2			100	25.6	4.7	43.0	2.6	5.0	19.1

INFERENTIAL ANALYSIS OF EXAMINATION PAPERS

SUMMARY OF RESULTS

University B

Paper 1		% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL
1	Ethics	12	3.0		2.0			
2/a	Ethics	5	5.0					
/b	Special	3	5.0					
3	Substantive	11	1.5		1.5			2.0
4/a	Ethics	2	5.0					
/b	Substantive	6	2.0		3.0			
5/a	Substantive	3	1.8		2.2	1.0		
/b	Special	9	0.5	1.0	2.5			1.0
6/a	Legal	4	3.0		2.0			
/b	Substantive	9	2.0		2.0	1.0		
7	Controls	17	0.5		0.5	1.0	0.8	2.2
8/a	Substantive	4	2.0		3.0			
/b	Substantive	7	1.5		2.5		1.0	
9	Reporting	8	1.5		2.0		0.6	0.9
TOTALS (%)		100	38.7	1.8	33.5	5.8	5.1	15.1

University B

Paper 2		% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL
1/A	Legal	7	1.5	1.0	1.0		0.5	1.0
/B	Reporting	7	1.5		2.0		1.5	
2/A	Legal	4	1.9		0.5			2.6
/B	Legal	6	1.3		0.4	0.3		3.0
/C	Legal	3	0.5	0.5	1.0			3.0
3/a-d	Ethics/Reporting	17	1.0	0.3	1.0			2.7
/e	Substantive	7	2.0		3.0			
4	Special	17			0.5	2.0		2.5
5	Legal	7			3.0		0.4	1.6
6/1	Special	3	2.5		2.5			
/2a	Reporting	3			2.5		1.5	1.0
/2b	Reporting	4	0.5		3.0		1.5	
7	Computers	15	2.1	0.4	1.5		1.0	
TOTALS (%)		100	22.0	3.9	29.1	7.2	8.5	29.4
PAPERS 1 & 2		100	30.3	2.9	31.3	6.5	6.8	22.3

INFERENTIAL ANALYSIS OF EXAMINATION PAPERS

SUMMARY OF RESULTS

University C

Paper 1		% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL
1/1	Controls	3	4.0				1.0	
/2	Controls	7	0.5		2.3	1.0	0.2	1.0
2	Controls	20			4.4		0.6	
3	Planning	15	1.2	0.5	2.8		0.5	
4	Substantive	20	1.5		3.5			
5/a	Reporting	3	1.0		1.0			3.0
/b	Reporting	4	1.5	0.5	2.0			1.0
/c	Reporting	8	0.5	1.0	2.0		1.0	0.5
6	Legal	20	0.5		3.5			1.0
TOTALS (%)		100	17.3	3.5	62.6	1.4	6.4	8.8

University C

Paper 2		% of	1	2	3	4	5	6
Q No:	Topic	Paper	KNOW	COMP	APPLY	ANAL	SYNTH	EVAL
1	Ethics	10	0.9		3.1	1.0		
2/1	Compliance	5	1.4	2.6		1.0		
/2	Substantive	12	0.4	1.6	2.5			0.5
/3	Substantive	7			2.3		0.5	2.2
/4	Special	2	3.5	1.5				
/5	Special	4			3.0	1.0	1.0	
3/a	Planning	6	0.9		4.1			
/bi	Special	6			3.5	0.5		1.0
/bii	Substantive	10	1.5		2.5		1.0	
4/1	Computers	10	1.9	0.5	0.5		0.5	1.6
/2	Computers	10		1.5	1.5	0.5		1.5
5	Legal	18	0.5	1.0	3.0			0.5
TOTALS (%)		100	15.2	14.6	46.7	5.4	4.5	13.5
PAPERS 1 & 2		100	16.3	9.1	54.7	3.4	5.4	11.1

QUESTION 1

(84 minutes : 70 marks)

On the 30 June 1983, the financial year end of XYZ Company Limited, the following balances appear in the general ledger:

	Dr. (Cr.)
Trade accounts receivable	R457 000
Bills receivable	20 000
Claims charged	9 500
Rent receivable	2 500
Allowance for doubtful debts	(25 000)
Bad debts written-off	15 000
Other receivables	
- Investment realised	100 000
- Miscellaneous	5 000
Sales	5 000 000

(NB - Net Profit after taxation is R350 000.)

REQUIRED

1. Draft a suitable presentation of the above in the balance sheet of XYZ Company Limited at 30 June 1983. The minimum statutory disclosure is required, taking materiality of disclosure into account. (5 marks)
2. Prepare a lead schedule for a working paper to cover your disclosure. Suitable cross references and a key should be included. (5 marks)
3. As part of your substantiation of trade accounts receivable you circularised all the accounts on a negative basis and 75 out of 200 accounts totalling R315 750 on a positive basis. All but 20 positive requests were returned: 30 were signed without comment but 15 had minor differences that you have cleared satisfactorily and 10 had the following comments:
 - 3.1 We regret being unable to provide the information you require because our company uses a computerised accounts payable voucher system.
 - 3.2 The balance of R1 050 was paid on 23 May 1983.
 - 3.3 The above balance of R7 750 was paid on 8 January 1983.
 - 3.4 The above balances have been paid.
 - 3.5 We do not owe you anything because the goods were supplied by you on consignment. See our Order No. 12751 and your due acknowledgment.

QUESTION 1 (Continued)

- 3.6 An advance payment of R2 500 made by us on 8 April 1983 should cover the 2 invoices of R1 250.00 shown on the statement.
- 3.7 We have not received these goods.
- 3.8 Your charge of R4 250.00 is excessive and has been disputed by us, refer to our letter of 15 May 1983.
- 3.9 These goods are on sale or return. Therefore we will pay you when we receive payment from the customers who buy them.
- 3.10 The R6 000 represents your deposit under the lease for the premises that you occupy at 10 North Road, Pietermaritzburg. Thus we do not owe you this amount but will apply it to the rent for July to December 1983 inclusive.
- What steps would you take in response to the above comments? (20 marks)
4. For the 20 non-replies mentioned in 3. above describe, fully, how you would satisfy yourself as to the propriety of the amounts outstanding. (10 marks)
5. List the assertions that you would verify by your substantive tests as regards trade accounts receivable. Identify the assertions which would not be verified satisfactorily by your circularisation of debtors and indicate how you would substantiate these assertions. (20 marks)

QUESTION 2

(24 minutes : 20 marks)

Mr. Goer Head, the sole shareholder/director of a small private company, approaches you to take over his audit. His previous auditor has resigned following a dispute over the adequacy of the companies records. Upon contacting the previous auditor you hear that Mr. Head purchased a micro-computer and, following the advice of the computer salesman transferred his:

1. Cash book
2. Sales, purchase and general journals
3. General ledger

to disc files on the micro. The previous auditor explained to you that he knew nothing of computers and did not wish to, he was over-worked and since he lacked the technical training to advise his client he agreed that Mr. Head should seek another auditor who would be able to advise him.

REQUIRED:

1. List the statutory records required by the Companies Act. (5)
2. Advise Mr. Head, in point form, what the financial statements should consist of and whose responsibility they are. (5)
3. If you considered, after completion of your audit, that adequate records had not been maintained, this would affect your report. Draft a suitable report. (10)

UNIVERSITY



EXAMINATIONS : NOVEMBER 1982

SUBJECT, COURSE AND CODE:-

AUDITING I ACCT3AUY

PAPER

QUESTION 3

(24 minutes : 20 marks)

Your old friend, Anna Thirtik, a registered auditor (also a registered CA(SA) telephones you with a request.

Whilst carrying out the audit of a client that she has had for approximately 3 years she has discovered that he has been concealing certain sales and pocketing the money. He is the sole director and shareholder and has asked for her resignation rather than submit to her investigation. She refused and he says he has held a general meeting, passed a resolution with 100% of the votes and therefore she is no longer in office. Since ill-health prevents her from continuing with the investigation she asks if you would handle the matter on her behalf, without her resigning.

REQUIRED:

1. State with reasons whether or not the above situation is a material irregularity. (4 marks)
2. Explain to the client the rights of an auditor in this situation. (7 marks)
3. State with reasons whether Anna Thirtik could resign. (4 marks)
4. State with reasons whether Anna Thirtik should resign. (3 marks)
5. Explain whether the client can remove her from office as he has said he has done. (2 marks)

20 marks

UNIVERSITY



EXAMINATIONS : NOVEMBER 1982

SUBJECT, COURSE AND CODE:-

AUDITING I ACCT3AUY

PAPER

QUESTION 4

(24 minutes : 20 marks)

The Generous Loan Company has 100 branch loan offices. Each office has a manager and four or five subordinates who are employed by the manager. Branch managers prepare the weekly payroll, including their own salaries, and pay employees from cash on hand. The employee signs the payroll sheet signifying receipt of his salary. Hours worked by hourly personnel are inserted in the payroll sheet from time cards prepared by the employees and approved by the manager.

The weekly payroll sheets are sent to the home office along with other accounting statements and reports. The home office compiles employee earnings records and prepares all necessary salary reports from the weekly payroll sheets. Salaries are established by home office job evaluation schedules. Salary adjustments, promotions, and transfers of full time employees are approved by a home office salary committee based upon the recommendations of branch managers and area supervisors. Branch managers advise the salary committee of new full time employees and terminations. Part time and temporary employees are hired without referral to the salary committee.

REQUIRED:

- (a) Based upon your review of the payroll system, how might funds for payroll be diverted? (8 marks)
- (b) Prepare a payroll audit program to be used in the home office to audit the branch office payrolls of the Generous Loan Company. (12 marks)

UNIVERSITY **A** EXAMINATIONS : NOVEMBER 1983

SUBJECT, COURSE AND CODE:- AUDITING I ACCT3AUJ

PAPER

QUESTION 5

(24 minutes : 20 marks)

For multiple-choice questions 1 to 3, indicate the letter of the single answer that best completes the statement or answers the question, and justify the choice that you have made.

(Note: Wrong answers will be penalised.)

1. Which of the following procedures would normally be performed by the auditor when making tests of payroll transactions?
 - a. Interview employees selected in a statistical sample of payroll transactions.
 - b. Trace number of hours worked as shown on payroll to time cards and time reports signed by the foreman.
 - c. Confirm amounts withheld from employees' salaries with proper governmental authorities.
 - d. Examine signatures on paid salary cheques.
2. One of the auditor's objectives in observing the actual distribution of payroll cheques is to determine that every name on the payroll is that of a bona fide employee. The payroll observation is an auditing procedure that is generally performed for which of the following reasons?
 - a. The professional standards that are generally accepted require the auditor to perform the payroll observation.
 - b. The various phases of payroll work are not sufficiently segregated to afford effective internal accounting control.
 - c. The independent auditor uses personal judgment and decides to observe the payroll distribution on a particular audit.
 - d. The standards that are generally accepted by the profession are interpreted to mean that payroll observation is expected on an audit unless circumstances dictate otherwise.
3. An auditor decides that it is important and necessary to observe a client's distribution of payroll cheques on a particular audit. The client organisation is so large that the auditor cannot conveniently observe the distribution of the entire payroll. In these circumstances, which of the following is most acceptable to the auditor?
 - a. Observation should be limited to one or more selected departments.
 - b. Observation should be made for all departments regardless of the inconvenience.
 - c. Observation should be eliminated and other alternative auditing procedures should be utilised to obtain satisfaction.
 - d. Observation should be limited to those departments where employees are readily available.

UNIVERSITY **A** EXAMINATIONS : NOVEMBER 1983

SUBJECT, COURSE AND CODE:- AUDITING I ACCT3AUJ

PAPER

4. As an in-charge auditor you are reviewing a write-up of internal-control weaknesses in cash receipt and disbursement procedures. Which one of the following weaknesses, standing alone, should cause you the least concern?
 - a. Cheques are signed by only one person.
 - b. Signed cheques are distributed by the controller to approved payees.
 - c. Accountant fails to establish bona fides of names and addresses of cheque payees.
 - d. Cash disbursements are made directly out of cash receipts.
5. An effective internal accounting control measure that protects against the preparation of improper or inaccurate disbursements would be to require that all cheques be
 - a. Signed by an officer after necessary supporting evidence has been examined.
 - b. Reviewed by the Accountant before mailing.
 - c. Sequentially numbered and accounted for by internal auditors.
 - d. Perforated or otherwise effectively cancelled when they are returned with the bank statement.
6. Which of the following internal accounting control procedures would be effective in preventing duplicate payment of vendors' invoices?
 - a. The invoices should be cancelled by rubber stamping, perforation, or other means prior to submitting the payment voucher for approval.
 - b. Voucher forms should be prenumbered, and all numbers should be accounted for.
 - c. Paid cheques should be sent by the bank to persons other than the cashier or accounting department personnel.
 - d. Properly authorised and approved vouchers with appropriate uncanceled documentation should be presented to the person authorised to sign cheques.
7. The theft of cash from an employer's bank account can be concealed by
 - a. Including a fictitious outstanding cheque on the bank reconciliation.
 - b. Overstating the cash column of the cash receipts book.
 - c. Recording a fictitious disbursement for the purchase of inventory.
 - d. Any of the above methods.

UNIVERSITY A - EXAMINATIONS : NOVEMBER 1983

SUBJECT, COURSE AND CODE:- AUDITING I ACCT3AUY

PAPER ...1.....

8. The Jackson Company records cheques as being issued on the day they are written; however, the cheques are often held a number of days before being released. The audit procedure which is least likely to reveal this method of incorrect cash-disbursements cutoff is to

- Examine cheques returned with cutoff bank statement for unreasonable time lag between date recorded in cash-disbursements book and date clearing bank.
- Reconcile vendors' invoices with accounts payable per books.
- Reconcile bank statement at year end.
- Reconcile exceptions to account-payable confirmations.

UNIVERSITY A - EXAMINATIONS : NOVEMBER 1983

SUBJECT, COURSE AND CODE:- ...AUDITING II ...ACCT5ADY

PAPER ...2.....

QUESTION 2.1

20 Minutes : 25 Marks

You are the auditor of T.J. Ltd which has three directors - X, Y and Z. X, the marketing director has boosted sales despite the current recession and it is proposed, in gratitude to him for his contribution to this year's anticipated results, to give him an interest-free loan from the company to enable him to buy shares of the company which are expected to increase in value once the current year's results become public.

It is proposed to issue these shares at 75c each. There are at present, 500 000 shares issued and the directors estimate that approximately 400 000 of these are under their control either through direct ownership or through family trusts.

Your senior, Rob Bumble, has picked up the company's intention from his inspection of the minutes of directors' meetings. He has requested you to advise him if this is permissible and if so what disclosure must be made in the financial statements and what formalities must be complied with.

Bumble has appended the following notes to aid you in your consideration of this matter.

"Authorised capital	R2 000 000
Issued capital	R500 000
Proposed loan to X	R15 000

The directors have not yet been presented with a draft set of financial statements and it is estimated that because of cost increases profits will only increase by a marginal amount despite the boost in sales."

YOU ARE REQUIRED:

to give Bumble the advice he has requested making any assumptions you deem necessary and considering all reasonable possibilities.

QUESTION 2.2

(36 minutes : 30 marks)

For the past few years you have been the auditor to The Hopping Brewery Limited and its subsidiary, Bubbelaas (Proprietary) Limited, in which The Hopping Brewery Limited owns a 51% interest. Bubbelaas (Pty) Ltd is the bottling, marketing and distribution company for the products of The Hopping Brewery Ltd and the remainder of its shares are owned by several persons not otherwise associated with The Hopping Brewery Ltd.

The directors of The Hopping Brewery Ltd are Large (Managing Director), Mann and Brand whilst those of Bubbelaas (Pty) Ltd are Hicks (Managing director) Mann and Lacquors.

The following clause appears inter alia in the Articles of Association of both companies:

"The management of the business of the company shall be vested in the directors and the directors may exercise all such powers and do all such acts as are not required by the Companies Act to be exercised or done by the Company in general meeting."

During the course of the audits of the above companies, for the year ended 30 September 1983, you become aware of the following:

1. Mr. Hicks had invented a new type of disposable fluid container in the shape of a cup, which kept its contents cool without having to be kept in a cool environment. He patented his design which he called the Hick-up and sold its sole rights to Bubbelaas (Pty) Ltd for R150 000 plus a royalty of R0.02 per cup sold.
2. As a result of detailed market surveys The Hopping Brewery Ltd decided that it was prudent for them to enter into a major expansion programme requiring an investment in buildings, plant and machinery amounting to R2 500 000. The total project would be financed from long term loan funds, which The Hopping Brewery Ltd would obtain from Bubbelaas (Pty) Ltd at market related interest rates with a pay back period of 15 years. Bubbelaas (Pty) Ltd would raise the funds by selling all its fixed property under a lease back scheme with a finance house. The lease back will include an option to Bubbelaas (Pty) Ltd to repurchase its property after 15 years.

REQUIRED:

State for each of one and two above:

- a. whether you as auditor would be satisfied with the indicated transaction (giving reasons), and
- b. what action and/or authority, if any, should in your opinion, be taken and/or obtained in the interests of all parties concerned, bearing in mind the desirability of issuing an unqualified audit opinion.

Assume that the directors of both companies are prepared to do whatever you require of them. Ignore taxation considerations.

QUESTION 2.3

(54 minutes : 45 marks)

You are the audit partner on the audit of Crackers (Pty) Limited, a company which is involved in the transport of heavy machinery. You have a great deal of experience in transport industry auditing as you have a number of clients whose business is transport. Crackers (Pty) Limited has a November year end and while you are working on the annual audit during November 1983 the following unrelated matters arose.

- (a) Whilst scrutinising the directors minutes you notice that the directors have formally employed a Mr. I. Pinch as company accountant with effect from 1 December 1983. You suspect and are able to confirm that Mr. Pinch is the person who had left another audit client of yours on suspicion of embezzlement. No charges had been laid against Mr. Pinch by the client but he was asked to resign immediately. (6)
- (b) The directors have, without conducting any surveys, committed the company to a television advertising campaign which has cost the company a substantial amount of money. You know from your experience in the transport industry that the cost of this form of advertising far outweighs the benefit, a fact which would have become known had even a superficial survey been conducted. (6)
- (c) You are approached by the managing director of Crackers (Pty) Limited who informs you that he has made enquiries from other transport companies and has discovered that the audit fees which his company are paying are far higher than the audit fees of other companies. He refuses to divulge the identity of the "other companies" but he tells you that although Crackers (Pty) Limited would like to retain you as auditor it will be forced to seek other auditors if a reduction in the audit fees is not forthcoming. (9)
- (d) Whilst analysing the "Legal Fees" account you come across an amount of R5 000 paid in respect of a fine imposed against Crackers for transporting a certain category of goods without the necessary permit for that category. This is the second occasion within 18 months that the company has been convicted of this type of contravention and you are aware from your experience that in terms of the Road Transportation Act if convicted for a third time within 3 years for this type of contravention, the company will be fined R10 000 and will have its offending vehicle and its load confiscated by the State. When you approach the directors about this they tell you that they know the regulations, that it is not worth the trouble of getting a permit because they seldom move goods of this particular category. (You are not entirely satisfied that the directors are being truthful about this.) They state furthermore that as the company will definitely not be moving that category of goods again during the current financial year, it has nothing to do with the current audit. (12)

QUESTION (Continued) 2.3

- (e) In April 1983 the company purchased, for cash, a new truck to add to its fleet. The cost of the truck was R110 000. In addition to the cost of the truck R16 000 was spent on modifications to the truck necessary for it to transport the abnormal loads of heavy machinery for which it was purchased. This work was carried out by Crackers itself and was of a permanent nature. The vehicle is currently on a 12 month contract in a remote part of Namibia, where it is being used to transport machinery from Walvis Bay to a mine.

(12)

REQUIREDFor Parts (a) to (d)

Discuss each situation stating with reasons any relevant actions you would or would not take.

For Part (e)

Describe in detail the verification procedures you would undertake in respect of this asset at balance sheet date.

QUESTION 2.4

(36 minutes : 30 marks)

You are the auditor of Blotch Limited, a company with a number of subsidiaries. The financial director of Blotch has prepared, with your help, a set of interim group financial statements without notes, a profit projection and a cash forecast, which he intends circulating to companies within the group. The object of the exercise is to draw comment from each of the subsidiaries on the possible reorganisation of the group. The information circulated is highly confidential and is to be available only internally, except for the profit projection - which will be made available to the group's bankers, who, if the proposed reorganisation is adopted, will provide any additional finance needed.

The financial director has approached you to certify and report on all the financial information which has been prepared. He does not require an audit but wishes to have your name associated with the financial information.

YOU ARE REQUIRED TO:

- (a) Discuss the director's request explaining your position under these circumstances. (Full reasons are to be given.) (15)
- (b) Write the report on the internally circulated documents which you would be prepared to give on the basis that although you are not performing an audit you are allowed access to information you require. (15)

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QUESTION

2.5

(18 minutes : 15 marks)

'Liability to third parties in respect of negligence is now firmly enshrined in the Public Accountants' and Auditors' Act.'

The quotation given above is from an article in the South African Chartered Accountant magazine shortly after the enactment of the Public Accountants' and Auditors' Amendment Act 1982.

YOU ARE REQUIRED

- (a) to describe the contents of this legislation, discussing the extent, if any, to which it extends or restricts the liability of Registered Accountants and Auditors.

(10)

- (b) to indicate, with reasons, whether in the light of the judgements in the Jeb Fasteners and Twomax cases, the South African legislation referred to above adequately reflects the current international situation relating to auditors' liability to third parties.

(5)

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QUESTION

2.6

(12 minutes : 10 marks)

Dodge (Pty) Ltd is one of your clients. They have recently revalued their land and buildings upwards. The directors wish to know if they may distribute the profit which has arisen on revaluation.

YOU ARE REQUIRED

to advise them as to whether the profit on revaluation is distributable.

(10)

SUPPORT YOUR ANSWER WITH REASONS.

QUESTION **2.7** (36 minutes : 30 marks)

Your client has a number of manufacturing plants at different locations within a 100 kilometre radius at the head office. The company has a mini-computer with a 128k CPU and uses a payroll package in object form only (developed by the supplier of its hardware) to prepare the weekly payroll for each of the plants. The following are produced by the system:

1. a pay slip for each employee with 2 copies on fanfold printouts
2. a cash analysis
3. various cost centre analyses for management use.

The plant each have an intelligent terminal and the time clerk enters:

1. the adjustments to standing payroll master file data, such as raises in hourly pay rate, to transaction file No. 1.
2. the months variable data i.e.

Employees name
 Hours worked
 Overtime hours
 Days leave taken
 Days absent
 Advances on pay during the week

into transaction file No.2.

These files are edited at the plant terminal and then transmitted via a telephone modem link to the central accounting department. The payroll is produced and a cheque drawn payable to Intrepid Guards. The pay slips, cash analysis and copy of the payslips on fanfold paper which also has totals for a number of payslips and total cash needed is sent to Intrepid Guards, with a cheque. They draw the money from the bank, prepare the paypackets, and deliver the sealed paypackets to the time office at each of the plants. At the plants the packets are distributed from the time office by the time clerks with the relevant foremen in attendance to identify the employees, who sign their time card as a receipt.

REQUIRED:

1. List the strengths and weaknesses, from an overall control point of view, of the above system. (8 marks)
2. What controls, at a detailed level, would you, as auditor wish to see at the following stages:
 - 2.1 Data capture and entry, (5 marks)
 - 2.2 Editing the transaction files, (6 marks)
 - 2.3 Processing procedures at the central accounting office (8 marks)
 - 2.4 Output. (3 marks)

QUESTION **2.8** (18 minutes : 15 marks)

General Lighting Company Ltd is a wholesaler of electrical fittings, electrical appliances, lights etc. It has offices in a number of major centres scattered throughout Natal. The company's management is considering purchasing for each office a desk-top microcomputer to aid its offices with their data processing; for example, maintain records of their customer accounts, stock and accounts payable. Before going ahead with the purchase, management has asked you as auditor of the company, for some advice. They are concerned about physical security and backup for the microcomputers and their diskette files. Some of their offices are located in remote towns.

REQUIRED:

1. Identify the control objectives for physical security and backup of the hardware, software, and data files at the microcomputer sites. (5 marks)
2. List some possible controls that might achieve these objectives, stating which objectives the control will help achieve, using the following format: .

1. Objectives (numbered)		
2. Control	To achieve objectives Nos.	(10 marks)

Be sure that the controls are likely to be feasible to implement.

QUESTION 1

(25 Marks : 23 Minutes)

The South African Institute of Chartered Accountants has issued a statement on the independence of auditors and the Companies Act and the Public Accountants' and Auditors' Act contain certain provisions which regulate the conduct of a Chartered Accountant in public practice.

YOU ARE REQUIRED TO :

discuss fully the following proposed acts by a Chartered Accountant in public practice in relation to the statements and laws referred to above and the general professional code of ethics.

1. Undertaking the audit of a listed company of which he performs the duties of secretary. (3)
2. Accepting the appointment as a director of a company which is a major competitor of an audit client of his firm. (4)
3. Undertaking the audit of a company to which management advice has been given by his partner. (3)
4. Undertaking the audit of a company when he is also one of three trustees of an estate which hold 1 000 12% debentures of R10 each in the company. (3)
5. Accepting the appointment as judicial manager of a company of which he is the auditor. (3)
6. Undertaking the audit of S Limited, a subsidiary company of H Limited, from which he had resigned as a director shortly before accepting appointment as auditor of S Limited. (4)
7. Agreeing to accept free insurance cover for his motor vehicle and his staffs motor vehicles from an insurance company in respect of fidelity insurance policies taken out by his client companies as a result of his advice. (5)

 25

QUESTION 2

(15 Marks : 13 Minutes)

You were appointed the auditor of Mini-Skirts (Pty) Limited (an established company in the clothing trade) in December 1982. Your first audit will cover the year ended 30 June 1983.

YOU ARE REQUIRED TO :

- (a) state what matters you would consider and the procedures you would carry out prior to accepting the appointment. (10)
- (b) state what work you would perform in the course of your audit in respect of the immediately preceding financial period. (5)

 15

QUESTION 3

(22 Marks : 20 Minutes)

Your junior clerk has informed you that he has verified the trade creditors of Mini-Skirts (Pty) Limited amounting to R600 000 as reflected in the draft financial statements, as he has :

1. Checked the addition of the list of trade creditors.
2. Agreed all amounts over R15 000 on the listing to them creditors' ledger accounts.
3. Agreed the list total to the amount as per the draft annual financial statements.
4. Obtained all the creditors statements and agreed all statement balances over R5 000 to the creditors ledger balances.
5. Performed cut-off tests by examining invoices received up to year end.
6. Obtained liabilities representation letter signed by a director and the accountant.

YOU ARE REQUIRED TO :

indicate what further audit work (if any) you would require to be carried out, before you would truly say that the trade creditors figure had been verified to your satisfaction.

QUESTION 4

(16 Marks : 14 Minutes)

During your audit of Mini-Skirts (Pty) Limited for the year ended 30 June 1983, you note that included in debtors is an amount of R210 000 owing by M C P Boutiques (Pty) Limited. You are also the auditor of M C P Boutiques (Pty) Limited and in your opinion, the debtor company is on the verge of liquidation. The directors of Mini-Skirts are unaware of their debtors predicament.

YOU ARE REQUIRED TO :

- (a) *state the auditors duty with regard to divulging information to a third party.* (4)
- (b) *state the steps you should take before signing the audit report.* (12)

8

QUESTION 5

(25 Marks : 23 Minutes)

In completing the fieldwork for the audit of Mini-Skirts (Pty) Limited for the year ended 30 June 1983 you discover that the following events and transactions took place after the year end :

1. On 11 July 1983 Mini-Skirts (Pty) Limited received a shipment of fabrics from Italy. The goods had been ordered in May 1983 and were shipped by the overseas supplier f.o.b. Naples on 13 June 1983.
2. On 31 July the directors declared a final dividend of 25c a share. (Aggregate amount R3 000 000.)
3. On 3 August 1983 stock at the company's factory in Salt River was damaged by a flood resulting in an estimated loss of R300 000 to stock included in the balance sheet at the year end.
4. On 14 August 1983 the company agreed to purchase the unissued share capital of Prince Clothing for R450 000 (450 000 shares at a premium of 50c a share).
5. On 19 August 1983 the directors issued the balance of the Companies unissued share capital.

All amounts are material to the financial statements.

The directors intend to authorise the financial statements on 5 September 1983.

YOU ARE REQUIRED TO :

- (a) explain how you would have become aware of these matters in the course of your review of post balance sheet events. (7)
- (b) indicate how the effect of these items will be reflected in the annual financial statements at 30 June 1983. Give reasons for your answer. (18)

25

8

QUESTION 6

(26 Marks : 23 Minutes)

While doing the audit of Mini-Skirts (Pty) Limited for the year ended 30 June 1983, the following information comes to your attention.

1. An advance of R4 000 to P Lane, a director of the company, to enable him to meet expenditure which will be incurred by him on behalf of the company during a trip to Europe to attend a textile fair and to go on holiday. The advance was made in June 1983 and it had not been accounted for until July 1983.
2. An unsecured housing loan made during the year of R30 000 to C Barnes, a director of the company. Interest at the rate of 14% per annum had been paid to 30 June 1983 but the capital amount is not due until 30 June 1987.
3. A loan made during the year of R4 500 to A Massey, a director of the company, to enable him to purchase a Mercedes 280SE from the company at its written down book value as a present for his wife. Interest at a rate of 14% per annum had been paid to 30 June 1983 and the capital amount is payable on 30 June 1985.
4. In order to assist the production directors brother (who owns one of the major suppliers of Mini-Skirts (Pty) Limited) to participate in the forthcoming share issue of Mini-Skirts (Pty) Limited, the company agreed to guarantee his overdraft to the extent of R15 000.

YOU ARE REQUIRED TO :

- (a) state the authority required for each of the above transactions. Give reasons for your answer! (8)
- (b) set out the audit work you would perform in respect of the above transactions and note the effect if any on the annual financial statements. (18)

26

③

QUESTION 7

(34 Marks : 31 Minutes)

At the interim audit of your client Mini-Skirts (Pty) Limited, for the year ended 30 June 1983 an extensive review of internal control was carried out by Henry Stone, a member of your staff. Extracts of the internal control questionnaire completed by Henry are set out below. You may assume that other questions dealing with purchases, stock and trade creditors aspects disclose no further weaknesses.

Purchases, stock and trade creditors

<u>QUESTIONS</u>	<u>COMMENTS</u>
1. Are purchase requisitions prepared and approved by responsible officials?	Yes - ordering is done by competent storemen after monthly stock counts, when it is noticed that minimum reorder levels have been reached. Reorder quantities and description of goods is entered on materials requisition list which goes to the creditors clerk.
2. Are purchase orders	
(i) issued for purchases of all goods and services?	No - only for purchases of raw materials.
(ii) prenumbered and all numbers accounted for?	Yes - prepared from materials requisition list on prenumbered company orders in triplicate by creditors clerk.
(iii) completed with specifications of terms and prices?	Yes - creditors clerk checks most recent suppliers invoice for price and terms and enters these on the order.
3. Are all goods received at a central receiving point?	Yes - at the door to the storeroom.
4. Are goods received records made out immediately on receipt of goods?	No - GRN's are not made out. Storeman checks goods with suppliers delivery note, signs it and keeps a copy.
5. Are goods examined on arrival as to quantity and quality and if so how is this evidenced?	Quantity - Yes. Evidenced - storeman signs delivery note. Quality - No. Client does not consider this necessary as he only deals with reputable suppliers.

③

QUESTION 7 (continued)

<u>QUESTIONS</u>	<u>COMMENTS</u>
6. Are perpetual stock records maintained? If so, is the recording function separated from that for the handling of goods?	Yes - kept by storeman. No - recording and handling both done by storemen. No separate record of quantities kept by accounts department.
7. Are there regular stock-takings and is there proper control over the adjustment of physical discrepancies?	Yes - Stock counts done monthly. Yes - discrepancies are adjusted. Physical quantities are put on cardex.
8. Are any items of stock liable to be pilfered or of particular high value?	Yes - all raw materials are easily resaleable and are generally expensive.
9. After purchase orders have been placed are they regularly reviewed for items for which no invoices have been received?	No - Creditors clerk is in charge of both invoices and orders. When invoices are received he compares the quantities to his orders.
10. Are suppliers invoices and credit notes:	
(i) serially numbered immediately on receipt?	No - filed in suppliers sequence by month.
(ii) checked for casts and extensions?	Yes - No evidence of this on several invoices examined by me.
(iii) approved by a responsible official?	Yes - signed by one cheque signatory when he is signing the relevant cheque. The other cheque signatory is the creditors clerk who checks the invoices to the suppliers statement.

YOU ARE REQUIRED TO :

draft a letter to the client pointing out any weaknesses disclosed in the above answers with recommendations for their improvement.

(B)

QUESTION 8

(22 Marks : 20 Minutes)

The following information was reflected in the annual financial statements of Mini-Skirts (Pty) Limited for the year ended 30 June 1982, in respect of plant and machinery :

	<u>Cost</u>	<u>Accumulated depreciation</u>	<u>Book value 30 June 1982</u>	<u>Depreciation Rate</u>
Plant & machinery	295 000	59 300	235 700	10% on cost

During the year ended 30 June 1983 the following transactions took place :

1. Four sewing machines with a total original cost of R7 500 and written down value at 30 June 1982 of R4 580 were sold for R5 000 and replaced by four new sewing machines costing a total of R10 500. All these transactions took place on the 28 February 1983.
2. Two new cutting machines costing R15 900 each were purchased and at 30 June 1983 one had been installed and in operation for two months. The other machine had not been delivered by 30 June 1983. Costs incurred in making internal modifications to the machine before operation amounted to R240 for labour (twenty-four hours at R10 per hour) and R360 for materials.

YOU ARE REQUIRED TO :

prepare audit working papers showing :

- (a) *a lead schedule of plant and machinery, detailing opening balances as at 30 June 1982, asset movements during the year, ordinary depreciation written off for the year and balances as at 30 June 1983. (8)
(SHOW ALL WORKINGS.)*
- (b) *the steps taken and information obtained in verifying plant and machinery movements for the year.*

(14)

22

QUESTION 9

(15 Marks : 13 Minutes)

Having completed the audit, you are now preparing your audit report of Mini-Skirts (Pty) Limited for the year ended 30 June 1983. All problem areas besides the one described below have been resolved to your satisfaction. Your partner Alex Taylor, who carried out secretarial work for Mini-Skirts (Pty) Limited, is assisting you in drafting the audit report.

Mini-Skirts has ten retail outlets with four outlets providing the major portion of sales. Unfortunately the stock records for the year end stock take at one of these four major outlets were lost before any details could be extracted from them. The loss was only discovered some time after the year end and the directors of Mini-Skirts are not prepared to assist you in any way to establish by alternate accounting procedures the value of stock at year end as they consider it will be a waste of money to do so. Instead the directors have insisted that you use an estimate for stock at 30 June 1983.

YOU ARE REQUIRED TO :

draft the audit report for Mini-Skirts (Pty) Limited for the year ended 30 June 1983.

Do not concern yourself with headings, addresses, dating and signing the report.

- 1 -

- 2 -

QUESTION

2.1

(28 marks : 34 minutes)

You are the auditor of Blotch Limited, a company with a number of subsidiaries. The financial director of Blotch has prepared, with your help, a set of interim group financial statements without notes, a profit projection and a cash forecast, which he intends circulating to companies within the group. The object of the exercise is to draw comment from each of the subsidiaries on the possible reorganisation of the group. The information circulated is highly confidential and is to be available only internally, except for the profit projection - which will be made available to the group's bankers, who, if the proposed reorganisation is adopted, will provide any additional finance needed.

The financial director has approached you to certify and report on all the financial information which has been prepared. He does not require an audit but wishes to have your name associated with the financial information.

YOU ARE REQUIRED TO

- (A) Discuss the director's request explaining your position under these circumstances. (Full reasons are to be given). (14)
- (B) Write the report on the internally circulated documents which you would be prepared to give on the basis that although you are not performing an audit you are allowed access to information you require. (14)

NOTE

You may assume that you are also the auditor of all the subsidiaries of Blotch Limited.

QUESTION

2.2

PART A

(8 marks : 10 minutes)

The board of directors of Smart Limited, of which you are the auditor, entered into a contract with Kompute Limited whereby the latter undertook to supply to the former 100 000 video screens a year for the next 15 years. None of the directors were or are interested in the contract.

As Smart Limited did not have available funds it borrowed R500 000, on the authority of the board, from Lendit Limited. None of the directors of Smart Limited were or are interested in the contract.

Neither Kompute Limited nor Lendit Limited are members of Smart Limited.

In terms of Smart's articles, contracts involving more than R100 000 require general meeting approval.

Several shareholders were perturbed to read in the financial press of the company's entry into the highly competitive computer industry. Accordingly, they intend to move in general meeting that both contracts be rescinded. The contract with Kompute is to be rescinded on the grounds that Smart did not have the capacity to enter into the computer industry, and the contract with Lendit on the grounds that the board did not have the authority to raise loans on the company's behalf.

YOU ARE REQUIRED

to state, giving reasons, whether the contracts can be avoided on these grounds.

PART B

(12 marks : 15 minutes)

A friend of yours, Mr Zilch, wishes to purchase a majority holding in Zut (Pty) Ltd, a manufacturing company, from Zero Ltd, the present holding company of Zut (Pty) Ltd. Mr Zilch has approached you for your opinion on the legality of the following mutually exclusive proposals in respect of the proposed purchase of shares. The purchase price is to be about R150 000.

- i) After acquiring the shares, Mr Zilch will pass a R75 000 mortgage over the fixed assets of Zut (Pty) Ltd. He will then draw this amount on loan account to settle the short term finance he obtained to pay for the shares. (3)
- ii) Zut (Pty) Ltd will have a rights issue of four (4) shares for every one (1) held. Zero Ltd will waive its rights in favour of Mr Zilch enabling him to acquire a majority holding by direct subscription for the shares. Zut (Pty) Ltd is highly liquid and is prepared to lend Mr Zilch R75 000, but the loan will be at a higher interest rate than Mr Zilch can obtain elsewhere, thus benefitting the company. (3)

/iii) The

2.2

QUESTION (Continued)

- iii) The purchase price is to be settled by a cash payment of R75 000 from Mr Zilch and the payment by Zut (Pty) Ltd of a management fee of R15 000 per annum to Zero Ltd for the next 5 years. (3)
- iv) Mr Zilch, a qualified engineer, will be employed by Zut (Pty) Ltd as production manager. The company (Zut) will then lend him money to purchase the shares he requires over the next 5 years. (3)

YOU ARE REQUIRED

to give your opinion on the above proposals in terms of the Companies Act 1973. Full reasons should be given.

PART C

(6 marks : 7 minutes)

Sections 26 (5), (6) and (7) of the PAA Act deal with the liability of auditors to third parties in respect of negligent performance of their (the auditors) duties. In addition, case law has assisted in the development of this subject.

YOU ARE REQUIRED

to indicate, with reasons, whether in the light of the judgements in the Jeb Fasteners and Twomax cases, the South African legislation referred to above, adequately reflects the current international situation relating to the auditors liability to third parties.

(6)

QUESTION 2.3

(47 marks : 56 minutes)

You are the audit partner on the audit of Crackers (Pty) Limited, a company which is involved in the transport of heavy machinery. You have a great deal of experience in transport industry auditing as you have a number of clients whose business is transport. Crackers (Pty) Limited has a November year end and while you are working on the annual audit during November 1983 the following unrelated matters arose.

- (a) Whilst scrutinizing the directors minutes you notice that the directors have formally employed a Mr I. Pinch as company accountant with effect from 1 December 1983. You suspect and are able to confirm that Mr Pinch is the person who had left another audit client of yours on suspicion of embezzlement. No charges had been laid against Mr Pinch by the client but he was asked to resign immediately. (8)
- (b) The directors have, without conducting any surveys, committed the company to a television advertising campaign which has cost the company a substantial amount of money. You know from your experience in the transport industry that the cost of this form of advertising far outweighs the benefit, a fact which would have become known had even a superficial survey been conducted. (8)
- (c) You are approached by the managing director of Crackers (Pty) Limited who informs you that he has made enquiries from other transport companies and has discovered that the audit fee which his company is paying is far higher than the audit fees of other companies. He refuses to divulge the identity of the "other companies" but he tells you that although Crackers (Pty) Limited would like to retain you as auditor it will be forced to seek other auditors if a reduction in the audit fees is not forthcoming. (9)
- (d) Whilst analysing the "Legal Fees" account you come across an amount of R5 000 paid in respect of a fine imposed against Crackers for transporting a certain category of goods without the necessary permit for that category. This is the second occasion within 18 months that the company has been convicted of this type of contravention and you are aware from your experience that in terms of the Road Transportation Act if convicted for a 3rd time within 3 years for this type of contravention, the company will be fined R10 000 and will have its offending vehicle and its load confiscated by the State. When you approach the directors about this they tell you that they know the regulations, that it is not worth the trouble of getting a permit because they seldom move goods of this particular category. (You are not entirely satisfied that the directors are being truthful about this). They state furthermore that as the company will definitely not be moving that category of goods again during the current financial year, it has nothing to do with the current audit. (8)

QUESTION 2.3 (Continued)

- (e) In April 1983 the company purchased, for cash, a new truck to add to its fleet. The cost of the truck was R110 000. In addition to the cost of the truck R15 000 was spent on modifications and adaptations to the truck necessary for it to transport the abnormal loads of heavy machinery for which it was purchased. This work was carried out by Crackers itself and was of a permanent nature. The vehicle is currently on a 12 month contract in a remote part of Namibia, where it is being used to transport machinery from Walvis Bay to a remote mine. (14)

REQUIREDFor Parts (a) to (d)

Discuss with reasons, the action you would take in each situation.

For Part (e)

Describe in detail the verification procedures you would undertake in respect of this asset at balance sheet date.

QUESTION 2.4

(35 marks - 42 minutes)

You are the auditor of Summer Sports Ltd a listed company involved in the manufacture of sporting goods. Due to the range of sporting goods manufactured, Summer Sports have traditionally experienced a negative cash flow in the winter season (April to August) during which they manufacture and stock pile for the summer season (September to March). The increased sales over the summer season have in the past produced a positive cash flow.

Over the past few years other companies have entered the sporting goods market and with the increased competition and seasonal cash flow, Summer Sports have faced increasing liquidity problems.

The summarized financial statements of Summer Sports at 30 July (financial year end) for the previous three years are as follows :

	1983 '000	1982 '000	1981 '000
Shareholders Equity	180	380	550
Share Capital	800	800	800
Accumulated loss	620	420	250
Debentures NOTE 1	900	1 000	1 000
	1 080	1 380	1 550
Fixed assets	1 400	1 515	1 630
Net current liabilities	(320)	(135)	(80)
	1 080	1 380	1 550

NOTE 1 repayable over the following nine years in instalments of R100 000 plus interest.

Whilst working on the July 1983 audit during October you are alarmed to discover that the expected positive seasonal cash flow for the summer season is not materialising and in addition that the company has incurred a further loss up to the 15 October of R200 000.

Mr Bakkies Malone, the company's financial director, has indicated to you that the directors have decided upon a plan to improve the performance of the company. He informs you that the company intends to :

1. Invest in new equipment to manufacture a range of winter sports goods.
2. Embark on a major advertising campaign to re-establish its products in the market.

/Accordinging

(B)

QUESTION ^{2.4} (Continued)

According to Mr Malone market research indicates that there is likely to be noticeable growth in the sporting equipment industry over the next few years. He considers that with additional cash resources of R400 000 raised immediately and an additional R200 000 per annum raised during each of the following two years, the company will be able to meet its short term cash commitments, finance the investment in new equipment and embark upon the proposed advertising campaign.

YOU ARE REQUIRED

to discuss the implications that Summer Sports financial situation would have on your responsibility as auditor, and to indicate what actions, if any, you would take.

NOTE 1

Your answer should include the effect on your responsibilities with regard to your audit report.

NOTE 2

Reasons in support of your discussion must be given.

QUESTION ^{2.5}

(14 marks : 17 minutes)

You are the auditor of Shippit (Pty) Ltd, a company which imports a range of consumer items from Expo Ltd, a company in the United Kingdom. The managing director and majority shareholder of Shippit (Pty) Ltd is Mr Twist. The owner of Expo Ltd is Mr Twist's brother who emigrated to the United Kingdom many years ago. The two companies are not connected in any way other than explained above. For some time now Mr Twist of Shippit has wanted to accumulate some funds in the United Kingdom for his use in the case of an emergency and has as a result concluded the following agreement with Expo Ltd.

Whenever Expo prepares an invoice for goods sent to Shippit the price is increased by 10%. Shippers then remit the amount of the invoice in the normal way accounting for the payment like any other purchase. Expo, on receipt of the payment from Shippit deducts 10% and pays it into a bank account in the United Kingdom in the name of Shippit (Pty) Ltd. Since the agreement with Expo was concluded this bank account has grown to R70 000.

YOU ARE REQUIRED

to state, giving reasons, whether or not you would be satisfied with this agreement.

QUESTION

2.6

(20 marks : 24 minutes)

You are the auditor of Rosendahl's Stores Limited, a company which is listed on the Johannesburg Stock Exchange.

During the year ended 30 June 1983 the directors decided to adopt the last-in-first-out (LIFO) method of stock valuation for the group. The stock in the company itself is immaterial and the directors have decided not to use the LIFO method of stock valuation for the company's own accounts. In addition the directors wish to continue to show group profits with stock valued on the previous method of valuation. The previous method of valuation was the first-in-first-out (FIFO) method.

At the time of signing the audit report for the year ended 30 June 1983 the Receiver of Revenue had not given his consent for the subsidiary companies to adopt LIFO. The group and subsidiary accounts were prepared on the basis that the necessary permission has been received.

Stock valued at FIFO at 30 June 1983 was R23 000 000 and at LIFO R19 000 000.

YOU ARE REQUIRED

1. To state what additional disclosure you would require in the Group Annual Financial Statements to reflect the effect of LIFO for the year ended 30 June 1983. Your statements should be fully supported with reasons. (7)
2. Assume that the Receiver of Revenue had given his permission for the subsidiaries to adopt LIFO prior to signing the audit report. This permission was granted on the condition that LIFO was adopted in the Group Annual Financial Statements. The directors of Rosendahl's Stores Limited refuse to change the basis for preparing the Group Annual Financial Statements and will not make additional disclosure. Your technical department informs you that the Receiver of Revenue will withdraw his permission for a company to use the LIFO method of valuation for stock if the conditions imposed are not complied with.
 - (a) Discuss the considerations you would take into account before issuing your opinion. (6)
 - (b) Draft your audit report for Rosendahl's Stores Limited for the year ended 30 June 1983. (7)

QUESTION

2.7

(30 marks : 36 minutes)

You are the auditor of Beach Oil (Southern Africa) (Pty) Limited. The company is a subsidiary of Beach Oil International which is based in the United States of America. In South Africa the company is estimated to have a 30% market share in the wholesaling of petroleum products.

The company uses an IBM 4341 mainframe computer which is located at the head-office in Cape Town. Each of the 43 wholesale outlets are linked to the computer via dedicated post-office lines. Each outlet has at least three VDU's which are used to capture transactions on a real-time on-line basis.

The Cape Town Data Centre employs seventy (70) computer services staff who are divided into the following sections

- Operations
- Systems support
- Systems development
- Maintenance Programmers

Beach Oil has a highly developed internal audit function which until recently had a very reliable computer audit section. The internal computer audit section has suffered a major set back with the resignation and transferring of key staff members. In the past they were relied on to evaluate new and existing systems for adequate control features. In addition they maintained and ran a Computer Assisted Audit Technique (CAAT) to extract debtor balances for circularisation, the results of which were used for external audit purposes.

The client is in the process of converting their debtors system (Trade Accounts Receivable (TAR)) to a new data base system and they estimate that the new TAR system will be running live by September 1983.

As the internal computer audit section is no longer functioning effectively the client is looking to you to provide the necessary computer audit services. Amongst other requests they ask you to take over the responsibility for maintaining and running the debtors circularisation CAAT.

The year end of Beach Oil (Southern Africa) (Pty) Limited is 31 December 1983.

YOU ARE REQUIRED

To discuss the considerations you would take into account when taking over the debtors CAAT from internal audit and how you would ensure that the CAAT was sufficiently reliable for audit purposes. Your answer should include a discussion of the audit procedures required when running the CAAT live.

QUESTION 1

MARKS : 10

Your client Tree Enterprises (Pty) Ltd, is engaged in the packaging industry. The junior clerk on the audit has documented the system of internal control over wages and has asked you for assistance in identifying any possible weaknesses in the system.

The following points are extracted from his notes:

1. Mr Bond records hours worked on time cards. He extends and casts each time card and on a weekly basis takes a machine-strip of the total hours worked which he signs. He sends the time cards and machine-strip to Mrs Fowl in the wages office.
2. Mrs Fowl punches all the time card information (hours and employee details) into an input terminal. This information is processed to generate the weekly wage payroll and an error report which is filed by Mrs Fowl.
3. The changes to master files, for example wage rates changes, are prepared by a separate personnel department and sent direct to the computer department. (Mrs Fowl has no access to the master files.)
4. Mrs Fowl packs the money into pay packets and later gives these to an independent person, Mr Small (from the personnel office) who has the sole responsibility for paying the employees.
5. Unclaimed wages are returned to Mrs Fowl who then immediately lists them in the presence of Mr Small.
6. Mrs Fowl and Mr Small sign the register as to the completeness of the listing of total unclaimed wages.

YOU ARE REQUIRED:

1. To list the internal control objectives for a wages system.
2. To identify any internal control weaknesses which are evident from the above notes.

(3)

(7)

Ye Olde World Enterprises (Pty) Ltd operates as an antique dealer. The company sells to the public from a shop in Claremont, specialising in yellowwood and stinkwood furniture. Mr Moneypenny is the sole shareholder and manages the business.

You are the auditor of the company. As a result of suggestions you made in your audit comments letter of the previous year, you have been approached by Mr Moneypenny to recommend changes to the company's accounting system. The objective of the changes to the system are to enable Mr Moneypenny to

- (i) exercise better control over the stocks by introducing a system of stock records
- (ii) prepare monthly trading accounts.

You are aware of the following:

1. To date no stock records have been kept. Mr Moneypenny proposes introducing a stock ledger which will provide him with a record of all items of stock on hand. Modern furniture to be recorded in front of the book and antique purchases in the rear.
2. Once a month Mr Moneypenny and a driver travel through the Boland and beyond with a truck load of modern furniture. They mainly visit farms and trade modern furniture for antiques. Certain farmers insist on cash payment for antique furniture.
3. During his absence, the shop is attended by Mrs Moneypenny, who also writes up the accounting records.
4. In many instances the antique furniture "purchased" is in disrepair. The restoration work is done by two artisans in a workshop at the back of the antique shop.
5. There is no fixed mark-up on antique items sold, each item being priced by Mr Moneypenny at what figure he considers reasonable.
6. The modern furniture, which is traded for the antiques, is purchased in bulk from the New Look Furniture Factory Ltd and is stored in the workshop. All delivery notes for this furniture are filed separately by Mrs Moneypenny. The shop does not sell any modern furniture to the public.
7. In the past stock has been counted annually at or very near the financial year end.

QUESTION 2 (Continued)

YOU ARE REQUIRED:

To draft a letter to Mr Moneyppenny outlining the changes to the accounting system which you recommend. Your answer should include the following:

(a) Modern Furniture

- Ordering
- Receiving
- Custody
- Recording (including the form which the stock ledger should take)

(b) Antique Furniture

- Purchases (in cash and in 'kind')
- Restoration
- Recording (including the form which the stock ledger should take)

QUESTION 3

MARKS : 15

Fine Tools Ltd, an engineering firm has a financial year ended 31 August 1983. The company specialises in making component parts for high precision machine tools. These component parts are manufactured in Epping Industria I and are stored in a warehouse situated in Milnerton near the SATS Container Depot. All stock records, kept at the factory in Epping, have been checked during the transactions audit. The results of these audit procedures indicated that these stock records were accurately written up during the year.

As senior in charge of the audit, it is your responsibility to plan the audit procedures to be carried out when attending the company's annual stocktake.

The client's pre planning meeting for the stocktake was held on 31 July 1983 when all the necessary arrangements were made regarding finalising stocktaking instructions, assigning responsibilities to staff members and setting the time and date (31 August 1983) for the stock count.

YOU ARE REQUIRED:

To discuss, in general terms, what audit work you would perform in attending the client's annual stocktake on 31 August 1983.

QUESTION 4

MARKS : 20

You are the auditor of Smirk Engineering (Pty) Ltd.

For the year ended 30 September 1983, your audit staff have completed a review of the internal control over the purchases and payments systems which they have found to be satisfactory. They have attended the annual stock count which was held on Friday 30 September 1983 and recorded all the relevant cut-off information.

The warranty period in respect of all items sold by the company, is 12 months.

The following balances appear in the draft financial statements at 30 September 1983.

	<u>Note</u>	<u>1983</u>	<u>1982</u>
		<u>000's</u>	<u>000's</u>
Trade Creditors		850	729
Trade Accruals		200	174
Receiver of Revenue	1	72	53
Provision for warranty claims	2	10	2
		<u>1 132</u>	<u>958</u>

Note 1. Balance owing in respect of SA Normal Tax and Undistributed Profits Tax.

Note 2. The warranty period in respect of all items sold by the company, is 12 months.

YOU ARE REQUIRED:

To list the audit procedures you would perform in order to verify the above balances at 30 September 1983.

(20)

QUESTION 5

MARKS : 15

You are the auditor of Bunker (Pty) Ltd. The following is a summarised balance sheet of the company at 30 June 1983, the year end date.

	<u>R000</u>		<u>R000</u>
Fixed assets	194	Share capital	100
		Retained income	154
Current assets		Current Liabilities	
Stock	53	Creditors	53
Debtors	64	Taxation	17
Bank	13		
	<u>324</u>		<u>324</u>

Turnover for the year was	1 847
Operating income, after tax, was	57

The audit has been completed by your clerk who prepared the following notes for your attention:

1. We only received a 23% response to our year end positive debtors circularisation. As this is a scope restriction I suggest we disclaim an opinion.
2. During the audit we
 - (a) - relied on the new internal control system which was installed by the firm's consulting division, and
 - (b) - acted as company secretary.

Do these factors impair the firm's independence?
If so, what are the consequences?
3. The clients provision for doubtful debts is R10 000. In my opinion it should be R30 000.

YOU ARE REQUIRED:

- (a) in relation to 1. above:
 - (i) to state whether you agree with the audit clerk's conclusion that this is a scope restriction. Give reasons for your answer.
 - (ii) to list the alternative audit procedures that the clerk should have attempted in order to overcome the problem noted by her. (3)
- (b) in relation to 2. above, to answer the two questions asked by the clerk. (4)
- (c) assuming all problems, except for that noted in 3. above (provisions for doubtful debts) were adequately resolved, to draft the audit report for inclusion in the company's 1983 annual financial statements. (8)

QUESTION 6

MARKS : 20

For each of the unrelated situations below state whether, in terms of the Companies Act, the transaction is

- (A) "illegal" or
 (B) "legal if certain Companies Act requirements have been complied with" or
 (C) "legal - no further Companies Act requirements".

(You may use the symbols (A), (B) or (C) to indicate your answer.)

If your answer is (B) (i.e. "legal if certain Companies Act requirements have been complied with") then state - in point form - the requirements laid down by the Companies Act.

If your answer is (A) (i.e. "illegal") briefly explain why.

If your answer is (C) simply state "C".

The year-end of all the various companies mentioned below is 31 December 1983.

1. In arriving at divisible profit Chunky Ltd took into account a profit made on the only disposal of a capital asset during the year. Instead of distributing the divisible profit Chunky Ltd used it all to redeem, at par, the preference shares which were due for redemption.
2. The directors of Sweetie Ltd issued shares to Pye (Pty) Ltd during the current year. Mr Bee is employed as an accountant by Sweetie Ltd. Mr Bee is not only a director of Pye (Pty) Ltd but is also in total control of Pye (Pty) Ltd, a control which he exercises free of any outside influence.
3. Have Ltd had surplus cash and it repurchased the 5% shareholding which Mr Havenot held in Have Ltd. The following journal entry reflected the transaction:

Dr share capital	R10 000
Cr bank	R10 000
4. Worn Out Ltd owed R100 000 to Shark (Pty) Ltd but did not have the cash resources to pay the debt. The directors of Worn Out Ltd were under harassment from Shark (Pty) Ltd and to relieve the situation the directors of Worn Out Ltd decided to sell Worn Out's only asset for R120 000.

5./...

QUESTION 6 (Continued)

5. The authorised share capital of Ladie Gracey Ltd on 1 March 1983 was stated to be 100 000 shares of NPV. The issued share capital on the same date was 60 000 shares of NPV. Ladie Gracey Ltd wished to reduce the authorised share capital of the company. On 2 March 1983 the company reduced its authorised share capital by cancelling 40 000 unissued shares.
6. Mr Thumblewood resigned as a director of Flybite (Pty) Ltd in August 1983. In November he was appointed by the directors of Brybite Ltd as the auditor of Brybite Ltd in order to fill a casual vacancy caused by the death of the previous auditor. The directors felt justified in making the appointment because they knew Mr Thumblewood when he was a director of Flybite (Pty) Ltd. Brybite Ltd is the holding company of Flybite (Pty) Ltd.
7. Glook Ltd was threatened by a takeover bid from a large competitor. To counter this threat Glook Ltd wished to gain favour with shareholders. To achieve this end Glook Ltd distributed all its divisible profit as a dividend and then with the consent of a general meeting utilised the whole of its share premium account to issue capitalisation shares to shareholders. After the capitalisation issue the issued share capital was equal to the authorised share capital.
8. The stated capital account of Moolmouse Ltd in August 1983 was R100 000, consisting of 50 000 shares of NPV. The authorised share capital of the company was 75 000 shares of NPV. In November 1983, Moolmouse Ltd issued, with the consent of all members but without a formal general meeting being held, 25 000 shares, in pursuance of a renounceable offer for subscription to all existing members in proportion to their shareholdings, at R1,90 per share. The full issue price was received by the company.

During 1972 Joe Bloggs incorporated a small family business with the name of Metalcraft (Pty) Ltd. The company manufactures metal doors, gates and burglar bars which are sold directly to the public as well as to retail stores ranging from small hardware concerns to supermarkets and discount stores. The company's year end is 31 December.

Mr Nod is a partner in the auditing firm Mitchell Baker & Co, a large firm with international affiliations.

1. Joe Bloggs and Mr Nod were playing golf in June 1982 when Joe mentioned that the shareholders were unhappy with the present auditors and asked Mr Nod if his firm would take over the audit with immediate effect.

Discuss any ethical principles involved and state, giving reasons, the correct procedure for Mr Nod to follow in the circumstances.

(7)

2. As a result of Mr Nod's dealings with Joe Bloggs their families often met socially. Mr Nod's son married Joe Bloggs's daughter in July 1983. Mr Nod is currently the partner responsible for the Metalcraft (Pty) Ltd audit.

Discuss, with reasons, any ethical implications arising from the above situation.

(3)

3. In February 1983 Metalcraft (Pty) Ltd purchased the entire share capital of Garden Fair (Pty) Ltd, a metal garden furniture manufacturer. By this stage Mitchell Baker & Co were the properly appointed auditors and bookkeepers of Metalcraft (Pty) Ltd. As Metalcraft (Pty) Ltd needed cash to finance the deal the company went public during August 1983. For historical reasons the audit of Garden Fair (Pty) Ltd, whose year end is 30 September, is to remain with their present auditors Weatherby, White & Co. Garden Fair (Pty) Ltd is material to the group.

Discuss, with reasons, the implications of the above for Mitchell Baker & Co and their year end 31 December 1983 audit of the Metalcraft Ltd group.

(7)

4. In August 1983 Joe Bloggs approached Mr Nod to assist in finding a suitable cost accountant for the group. As Mitchell Baker & Co have often performed client recruitment services for their clients, Mr Nod agreed. When interviewing applicants for the position the most suitably qualified and the best candidate, Mr Phillips, expressed an interest in joining the MAS staff of Mitchell Baker & Co where there happened to be a vacancy.

Discuss any ethical principles involved and state, giving reasons, the correct procedure for Mr Nod to follow.

(3)

You are the senior-in-charge of the audit of Pepri Wholesalers Ltd, a company which sells building supplies to the trade. You have recently completed the preliminary internal control review of the Sales/Receipts cycle. In conjunction with the review you wrote the following brief notes relating to the client's sales procedures:

"Orders for goods are received by telephone, through the post or over the counter. In all cases a 5 part document (sales invoice) is prepared in the order department. This reflects the name and address of the customer, description and quantity of goods ordered and is priced.

Copy 5 is a fixed copy;

Copy 4 goes to the sales department;

Copies 1, 2 and 3 go to stores.

Stores retain copy 3 (the perpetual inventory records are written up from this copy) and goods are despatched together with copies 1 and 2.

The customer signs copy 2 which is returned to be matched with copy 4 in the sales department. A customer's account is only charged once copy 2 is matched with copy 4 (which can take up to as much as one week). Statements are sent at month's end, when a debtors age analysis is also produced and the debtors control account reconciled.

The order department is instructed not to process orders of customers who are over their credit limits (the credit controller supplies a monthly listing of these) and new customers must be approved by the credit controller."

The copy sales invoices prepared and filed in the sales department were used as the sampling unit for testing compliance and the accuracy of transaction recording. The following are extracts from the working papers relating to the audit tests:

1. Attributes tested.
2. Evaluation of test results.
3. Explanation of errors found.

Attributes tested

1. For each invoice check credit approval.
2. Despatch clerk's signature on invoice - evidence that goods picked from store agree with invoice details.
3. Posting traced to stock records.
4. Signature on invoice - evidence of pricing check.
5. Price agreed to price list.
6. Signature on invoice - evidence of calculations check.
7. Prove calculations.
8. Customer's signature on invoice.
9. Signature on copy 4 of invoice as evidence of matching to copy 2.
10. Posting traced to customer's account.

Evaluation of test results

Attribute tested	Confidence level	Error rate in sample	Max. potential error rate	Max. acceptable error rate
1	90	5	8.3	5
2	95	2.2	4	5
3	90	4.3	7.4	10
4	97.5	4.4	7.8	5
5	90	1.25	1.8	2
6	97.5	1.3	3.5	3
7	90	.6	3.2	5
8	90	4.7	8	10
9	97.5	NIL	.9	2
10	97.5	.8	1.9	2

Explanation of errors

1. Errors for attributes 2, 3, 5, 7, 8 and 10 were not investigated as the maximum potential error rate does not exceed the maximum acceptable error rate.
2. Attribute 1.
3 invoices were not approved for credit; all being in respect of new customers.

3. Attribute 4.

4 invoices were not signed off as checked for correct pricing. The pricing of 3 of these invoices was found to be correct. The 4th invoice error resulted in the customer being under charged by R123. The sales department staff cited "pressure of work" at certain times of the year as a reason why it was impossible to check pricing in all instances.

4. Attribute 6.

2 invoices were not signed off as checked for arithmetical accuracy. Of these one was correctly calculated and the other was overstated by R50 as a result of an addition error.

At the audit manager's request you have prepared the following tentative audit programme for the verification of debtors. The programme was drawn up after making the preliminary internal control evaluation but before testing compliance with the laid down system and testing the accuracy of transaction recording.

Trade Debtors Verification Audit Programme - Year end 31 December.

1. Obtain the aged schedule of debtors at 30 November 19xx, and agree the total to the general ledger control account.
2. Using M U S T (Monetary Unit Sampling Technique) with a sampling interval of R10 000 make a selection of debtor accounts reflected on the above schedule.
3. For selected debtor accounts,
agree balances with those reflected in the debtors ledger and
despatch positive debtor confirmation requests.
4. Debtors confirmation follow up;
 - (i) If debtors have not confirmed within 2 weeks, send a second request.
 - (ii) If still no response, vouch subsequent payments, if any, or vouch amounts to signed copy 2 invoices.
5. Discuss with the credit controller all debtors outstanding in excess of 90 days and with balances above R1 000 as reflected in the November aged analysis schedule and in so doing obtain satisfaction that sufficient provision has been made for debts which are doubtful.
6. Determine that the trade debtors outstanding at 31 December are reflected in the annual financial statements in accordance with G.A.A.P.

2.2
QUESTION (Continued)

REQUIRED:

1. Each attribute tested in a transaction audit programme may be related to one or more audit objectives.

Identify major audit objectives of a credit sales system and relate each of the ten attributes tested, and listed above, to one or more of these objectives. (10)
2. The given debtors verification programme is incomplete. Based on your evaluation give the omitted procedures that should be performed when verifying trade debtors at the year end, (Do not discuss the steps involved in selecting and mailing debtors confirmation letters.) (23)
3. Modify, as necessary, the trade debtors verification programme (as amended by you) as a consequence of the results of the transaction audit tests and indicate any other action that should be taken. Give reasons. (15)
4. Explain what you understand the following to mean in a statistical sampling context;

(i) Confidence level

(ii) Precision limit. (4)
5. Give possible reasons why different confidence levels and precision limits were used for the test of attributes. (8)

QUESTION 2.3

MARKS : 45

You are the auditor of Beta (Pty) Ltd, a company which develops, builds and markets large complexes of townhouses. You are presently planning the audit for the year ended 30 June 1983.

The company has a good control environment and management is conscious of wanting to maintain good internal controls in all areas. The following items appeared in the draft 1983 financial statements:

	1983	1982
	R000	R000
"CURRENT ASSETS		
Townhouses under construction (Notes 5 and 6)	11 620	8 313
Stocks of building materials (Note 6)	2 170	1 930
CURRENT LIABILITIES		
Provision for project development expenditure	4 150	5 180
NOTE 5		
Project development costs	6 475	6 130
Townhouse construction costs	5 145	2 183
	<u>11 620</u>	<u>8 313</u>

NOTE 6

All townhouses under construction and stocks of building materials are valued at F.I.F.O. cost. Overheads are included where appropriate."

During your audit you will carry out some or all of the following types of audit routines:

Type

- A - review and test accounting systems and internal controls for compliance
- B - detailed tests of transactions (vouching)
- C - year end verification procedures on balances (verification)
- D - analytic review techniques

The company has not sold any townhouses during the 1983 financial year.

YOU/...

2.3
QUESTION (Continued)

YOU ARE REQUIRED:

- (a) to indicate the sources of information you would consult and the types of information you would expect to obtain from each source, when planning the 1983 audit. (12)
- (b) in respect of the three balance sheet items shown above,
- (i) to list the particular risks of misstatement that you would consider when planning the audit, and (12)
- (ii) for audit routines B, C and D, the following must be given (21)
- Routine:
- B - briefly describe the overall objective(s) of the vouching procedures you would undertake.
- C - briefly describe types and objectives of the year end verification procedures you would carry out. (Ignore disclosure requirements.)
- D - indicate the specific analytic review technique(s) you would apply.

2.4
QUESTION

MARKS : 40

Worthwhile Stores Ltd are nation-wide retailers of budget clothing selling for cash and on credit. Their accounting systems are at present highly centralised with each branch remitting a daily return of expenses, sales and receipts to the Head Office in Bloemfontein. Copies of all supporting documentation accompany these returns.

Branches are accountable for their own stockholdings and monthly physical stockcounts are held for comparison to Head Office theoretical balances.

In Bloemfontein the accounting data is processed on a large main frame computer. All applications are written in COBOL and systems development and maintenance are performed in-house at Head Office.

The directors of Worthwhile Stores Ltd have recently decided to install micro-computers in each of their 100 stores. These machines will be used to capture data which was previously remitted manually to Head Office. The micro-computers will be able to communicate with the Head Office computer via dial-up lines, to transmit the previous day's financial information. The branch files will simultaneously be updated by the central computer and will hold information on the store's debtors and stock on floppy disk. Eventually, the micro computers will be able to operate as intelligent terminals and use all the facilities of the main frame, as and when necessary.

As the new system represents a major change to the accounting functions the directors are keen to involve the auditors in the development process, and have approached you in this regard.

YOU ARE REQUIRED:

1. To indicate the possible advantages and disadvantages of assisting your client in developing the new system. (20)
2. To list the significant changes to the client's accounting system and discuss in turn how these would affect your audit approach. (20)

QUESTION

2.5

MARKS : 35

Discuss briefly the legality of the following transactions which are unrelated. If the transaction is prohibited, state that fact, giving the reason for the prohibition. If the transaction is permitted by the law, providing certain requirements are met, state that fact and set out such requirements.

TRANSACTIONS:

1. An issue of shares to a company controlled by a director of the issuing company at a price below par and market value. The subscription price is to be paid in two instalments.
2. The sale by XYZ Ltd to a director of one of its subsidiaries, PQR Ltd, of an option to purchase the shares held by XYZ Ltd in a subsidiary of PQR Ltd. The shares involved are listed on the Johannesburg Stock Exchange.
3. A guarantee by XYZ Ltd to Mr Sly's bank to enable Mr Sly to subscribe for shares in a subsidiary of XYZ Ltd. Mr Sly is a director of XYZ's holding company, his only directorship. XYZ's business does not involve the provision of finance.
4. To assist Mr Mud in raising a loan from a bank to purchase shares in Kriel Ltd, Kriel Ltd gives a pledge to the bank of the shares held by Kriel Ltd in its subsidiary, Moon (Pty) Ltd. Mr Mud is a manager of Kriel Ltd but not a director.
5. To enable Mr Amity to purchase the shares in XYZ Ltd and Mr Ville's loan account in XYZ Ltd, XYZ Ltd made a loan to Mr Amity. The written loan agreement stated that the loan was to enable Mr Amity to purchase the shares and the loan account and the agreement did not specify that part of the loan related to the shares and part to the loan account.
6. ABC Ltd holds 40% of the equity shares in PQR Ltd the balance being held by XYZ Ltd. ABC Ltd, although holding only 5% of XYZ Ltd's preference shares, controls the voting power at XYZ's general meetings through a shareholder's voting agreement. Pursuant to an offer to the public by ABC Ltd, PQR Ltd subscribed for 51% of the shares available for subscription. This was pursuant to PQR's policy of investing surplus funds in shares with a history of high dividend yield.
7. To make its shares more marketable ABC Ltd split each of its R2 shares into two R1 shares.

8./...

Question (Continued)

8. An issue of debentures by ABC Ltd to XYZ Ltd. All the shares of ABC Ltd are held by Mr Areus who is a director of XYZ Ltd. This is Mr Areus' only directorship.
9. In exchange for a block of flats XYZ Ltd issued to one of its directors 150 000 R1 ordinary shares at R1,50 each when the market value was R2,00 each. The market value of the building is R225 000.
10. In order to give Mr X 100% control of ABC Ltd, ABC Ltd cancelled the shares not held by Mr X and returned the capital to the shareholders.

THE ERCOM SYLLABUS

The following is summary of the eight main topic headings of the ERCOM syllabus together with the relevant objectives of each.

1 THE AUDIT

Objectives

Candidates should be able to:

- (a) State and explain the concepts, principles and procedures relevant to the audit function.
- (b) Apply such concepts, principles and procedures to given circumstances.
- (c) Analyse and evaluate auditing concepts and principles.

2 THE AUDITOR

Objectives

Candidates should be able to:

- (a) State describe and explain facts relevant to the position of an auditor.
- (b) Apply such facts to practical situations.
- (c) Analyse, interpret and assess the actions of an auditor given a realistic practical situation.

3 THE ACCOUNTANCY PROFESSION

Objectives

Candidates should be able to:

- (a) List and explain factual information pertaining to the auditing profession.
- (b) Explain the nature and rationale of the ethical system.
- (c) Apply the professional rules and standards governing the auditor in practice.
- (d) Judge the acceptability of an auditor's professional conduct in a realistic situation.

4 ACCOUNTING SYSTEMS AND INTERNAL CONTROL

Objectives

Candidates should be able to:

- (a) Describe accounting systems and internal control.
- (b) Explain the principles of any sound system of internal control.
- (c) Identify internal control objectives for accounting systems.
- (d) Design systems of accounting and control by outlining control features and techniques which will achieve control objectives.
- (e) Given a systems description, identify control weaknesses and recommend improvements thereto.
- (f) Explain and assess the various approaches adopted by auditors in documenting and evaluating accounting systems and internal controls.

5 THE AUDIT PROCESS

Objectives

Candidates should be able to:

- (a) Explain concepts and principles relevant to the audit function.
- (b) Explain the major stages of the audit process and the rationale behind each.
- (c) Apply these concepts and principles to a given practical situation.
- (d) Draft a suitable audit report based on the results of audit findings.
- (e) Evaluate the given actions of an auditor using generally accepted auditing standards as a measure of performance.

6 SAMPLING

Objectives

Candidates should be able to:

- (a) List and describe the various sampling techniques and plans available to auditors.
- (b) Explain the audit relevance (including the audit objectives they meet) of the various sampling plans.
- (c) Debate the advantages and disadvantages which flow from the use of statistical sampling.
- (d) Assess and explain the considerations and procedures which the auditor should bear in mind and follow in the practical application of the various sampling plans, which would include sample design, sample selection and sample evaluation.

7 COMPANY LAW

Objectives

Candidates should be able to:

- (a) List and explain the relevant prescriptions of Company Law.
- (b) Apply such prescriptions to given practical situations.
- (c) Assess practical situations in the audit process and advise on their effect on the audit function.

8 THE AUDIT OF ELECTRONIC DATA PROCESSING SYSTEMS

Objectives

Candidates should be able to:

- (a) List and explain the relevant controls applicable to electronic data processing.
- (b) List and explain the audit approaches and relevant audit process applicable to the audit of an electronic data-processing system.
- (c) Analyse and evaluate controls relating to an electronic data-processing system and apply these to a practical situation.